

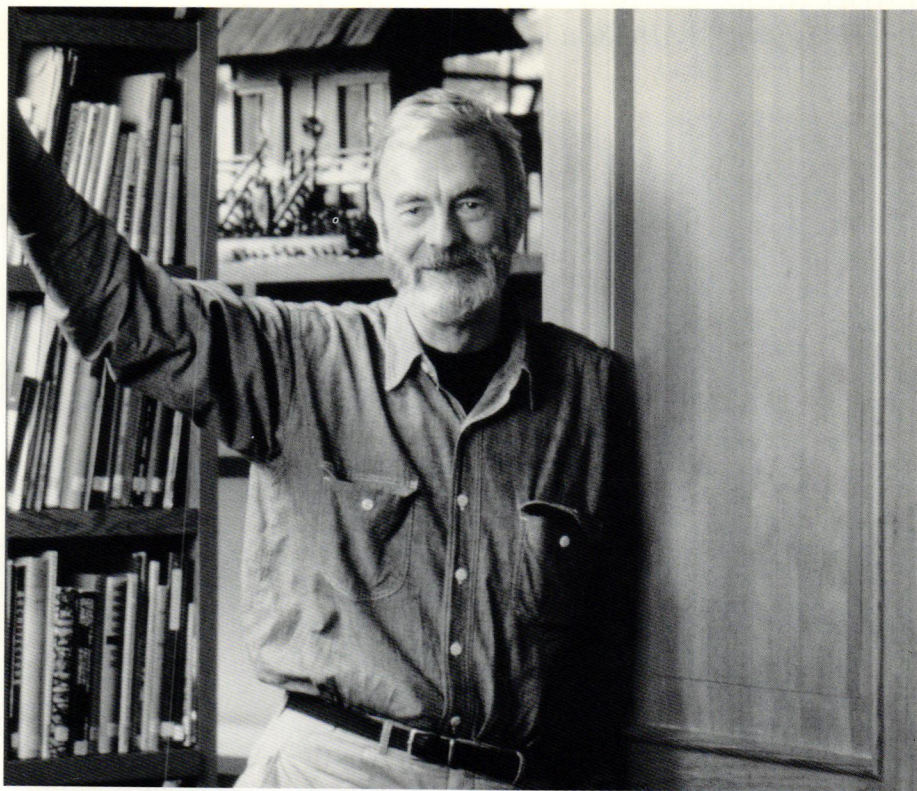
Summer 1999

A R C H I T E C T U R E
CALIFORNIA





a celebration of life



Joseph Esherick, FAIA
1914-1998

This issue of *Architecture California* is dedicated to celebrating the life of Joseph Esherick. Joe, as we all knew him in the architectural community, was recognized throughout the world as a renowned architectural educator and practitioner. In 1989, Joe, along with the late William (Bill) Turnbull and Barton Phelps, had a vision for *Architecture California*. The current format of this magazine is the result of that vision. Joe's dedication to the straightforward discourse on architecture was the genesis of this new format. His editorial counsel and support has brought recognition within California and nationally for the AIACC *Architecture California* magazine. It is an honor for the Editorial Board of *Architecture California* to publish this issue in celebration of his life.

"In this society of pretenses and misconceptions, Joe possessed the integrity of a statesman in a bygone era, the gentleness of a poet, the sensitivity of an artist and the spirit of the wind. He loved people and people loved Joe."

Susan Maxman, FAIA

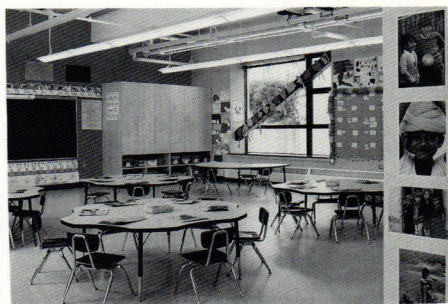
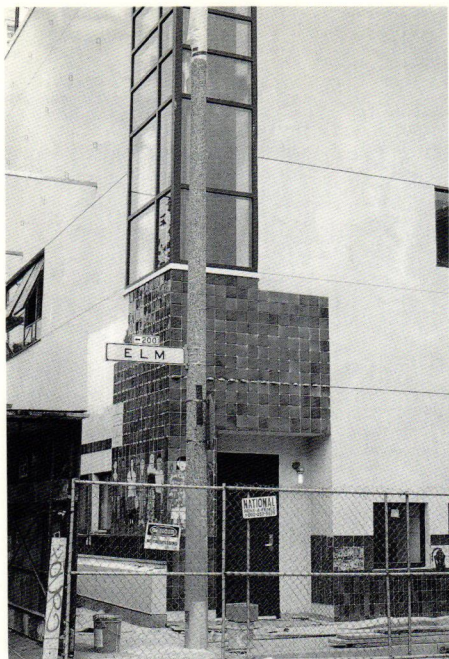
Tenderloin Community School

San Francisco, CA

EHDD Architecture, 1999

Joseph Esherick, FAIA, Senior Design Principal

(PHOTOS COURTESY OF EHDD)



The Tenderloin Community School is a kindergarten through 5th grade school with a children's center for three- to five-year olds. Joseph Esherick, FAIA, the senior design principal of Esherick, Homsey, Dodge, and Davis was instrumental from the selection of the site to final building details in the building. It is a symbol of EHDD's commitment to making buildings which reflect the culture of the users. It challenges the traditional notions of school as a fortress with a design opening the doors and walls, exposing the innovations and learning happening within. The majority of the 600 children attending the school come from the Tenderloin. Together, with Joe, the children learned about architecture and brought it to their school.

A R C H I T E C T U R E
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Cover: Mural by children from the Tenderloin School. Courtesy of Jennifer Devlin, AIA, EHDD.

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From the Editor: Places for Learning

Our society is in trouble, and we know it. We know because when we compare the way we now feel with the way we use to feel, there is a difference, and we feel uncomfortable. We are aware of the symptoms, but we don't necessarily have a means of framing the conditions to make them accessible, understandable, and, more importantly, find resolution.

We do know one of the serious symptoms in our society is the failure of our system of public education. This issue of *Architecture California* attempts to frame a set of challenges and projects which illustrate the important role education plays in our personal lives, our communities, and our futures. Most of us can remember a time when our school systems produced graduates who were a well-educated, literate population, fully capable of functioning in the civil debates of our times.

Now the schools produce millions of functionally illiterate graduates effectively deprived of access to the culture and benefits of our new and diverse world. The question is, "How can we as designers engage in a solution to this important societal condition?"

The theme of this issue, "Places for Learning,"—the neighborhood elementary school, the high school, the school as community forum, and the college campus—demonstrates how important the quality of place and the resulting buildings and landscapes are to the mission of education. Each of these environments present important



Drawing and commentary by Geri

challenges to architects, planners, landscape architects, and other environmental designers who engage in the debate at many different levels. These environments are the work places for teachers, administrators, parent-aids, and, most importantly, our children as learners. The objective in this issue is to set forth ideas about the role that the school environment plays in shaping the education of our youth—the next generation of leaders—as we face the next millennium.

The school environment is a vehicle for achieving certain aspects of learning. It is a milieu where teacher and learner interact together hopefully with a shared desire to increase the capacity for each of the participants to expand her/his knowledge, skills, and values. To be effective in this effort, it takes many layers of decisions and commitments on the part of the designers of our educational systems. We must

convince our politicians, community leaders and the general populace that education must be their highest priority. Secondly, there must be a commitment to provide places which respect the sensibilities of the learner and the teacher. This must include a physical environment which projects an attitude of hope and stewardship of the culture of our times and becomes a support vehicle for delivering the content and skills needed to master a subject through appropriate technology and human interaction.

The issue first begins with an article entitled "Class Dismissed: Higher Education vs. Corrections," which illustrates the history of support for education in California. The second article, "Architectural Services, Construction, and Funding of California Schools," provides an overview of the most current debates and results of funding the capital improvement agendas for schools in California.

These two articles are followed by a section acknowledging architects, their consultants, other partners, and school districts that have made strides to provide new school facilities in California. Included are selected samples of the C.A.S.H./AIACC Excellence and Honor Award winners for 1998 and 1999. These projects demonstrate the breadth of work currently being designed and constructed in California.

The next set of articles construct a view of the school as a place where architecture becomes planning, as a place for leadership, a place for community action, a place of architecture as instruction, and as a workplace for teachers and students. The final article presents the current debate on the quality of school environments between AIA Los Angeles and the Los Angeles Unified School District.

These articles are followed by the section, "Abroad Perspective,"

illustrating four schools in other parts of the world which exemplify the opportunities architects had to engage in cutting-edge design activity and influence the direction of education. These specific projects were selected to demonstrate the breadth of response to the challenge of building schools that support quality education.

And finally in the *etcetera* section, a set of original drawings and statements from school children in California expressing their relationship to the school as a building and learning environment. As we know, children are central to our understanding of what schools are and should be. If we, as designers, could only capture in our school projects the energy displayed in these drawings, the debate about issues such as stock plans and the role of the school facility in the learning process could be resolved.

As we move into the next century, it is clear that education must be our top priority if we want to continue to be a world leader in civility, industry, health care, entertainment, and the design of quality environments. The challenge is not can we, but will we place a priority on those issues that will reclaim higher ground for our children for several generations to come. Mother Teresa noted, "To keep the lamp burning we have to keep putting oil in it."

W. Mike Martin, FAIA
Editor

Class Dismissed: Higher Education vs. Corrections

Dan Macallair, Khaled Taqi-Eddin and Vincent Schiraldi
Reprinted with Permission from the Justice Policy Institute
San Francisco, CA

INTRODUCTION

The 1998-1999 state budget included significant funding increases for higher education. This increase represents a step in the right direction, but this is an unusual year in that California had a \$4 billion surplus at the end of the 1997-1998 budget. Over the past decade, higher education has steadily decreased as a portion of the general fund from 15 percent in 1988-1989 to 13 percent in 1998-1999. (i) If higher education still held a 15 percent share of the General Fund as it was a decade ago, its budget would be \$1.2 billion higher. While the need for a more specialized workforce is increasing, California has watched enrollment in its universities decrease.

By contrast, the state has seen corrections rise at a greater rate than any of the other five major budget categories in the General Fund. In 1980, California had 12 prisons and prison guards made approximately \$21,000 per year. Presently, the state has 33 prisons, and correctional officers' salaries have more than doubled (to \$46,200) from what they were less than 20 years ago.

The tradeoff between prisons and universities is not unique to California. The Justice Policy Institute (JPI) has conducted a series of analyses on the shift in funding from higher education to corrections taking place nationally. Some of our findings include:

- States around the country spent more building prisons than colleges in 1995 for the first time. That year, there was nearly a dollar-for-dollar tradeoff between corrections and higher education, with university construction funds decreasing by \$954 million to (\$2.5 billion) while corrections funding increased by \$926 million to (\$2.6 billion). Around the country, from 1987 to 1995, general fund expenditures for prisons increased by 30 percent, while general fund expenditures for universities decreased by 18 percent. (ii)
- During the 1990s, the state of Maryland's prison budget increased by \$147 million, while its university budget decreased by \$29 million. Nine out of 10 new inmates added to the prison system during this period were African-Americans. (iii)
- The budget for Florida's corrections department increased \$450 million between 1992 and 1994. That is more of an increase than Florida's university system received in the previous 10 years. (iv)
- Washington, D.C. literally has more inmates in its prisons than students in its university system. D.C.'s corrections system experienced a 312 percent increase in funding from 1977 to 1993

compared to an 82 percent increase in its university system during that period. (v)

The tradeoff between prisons and universities is an important analytical subject for a variety of reasons. Prisons and universities generally occupy the portion of a state's budget that is neither mandated by federal requirements nor driven by population—like Medicare or K-12 education. Because they dominate a state's discretionary funds, prisons and universities must “fight it out” for the non-mandated portion of the state's budget.

Perhaps more importantly, however, prisons and universities have the same “target audience”—young adults. As such, the fiscal tradeoffs between these two departments can serve as a barometer of sorts, helping to gauge a state's hope for its future.

METHODOLOGY AND PURPOSE

The purpose of this study is to first examine the state's spending patterns in higher education and corrections during the Wilson administration. JPI sought to compare these changes using annual expenditure data from the California Postsecondary Education Commission (CPEC). Data produced by CPEC will also be used to examine student tuition fees over the same period of time.

Finally, using California Department of Corrections' (CDC) data on incarceration rates and CPEC enrollment data for both the California State University (CSU) and University of California (UC) systems, we will examine the changing racial composition in public colleges and prisons. The focus of this section will examine the declining male populations in public universities and the increase in prisons.

We will show that at a time of high anxiety in California's higher education system, more people of color were

entering the prison system than were entering full-time undergraduate four-year colleges. While the gap between college graduates and inmates has grown over the decades, the Wilson Administration oversaw prison growth and tuition increases at greater levels than those that occurred even under Governors Reagan and Deukmejian. Californians need to know what path their youth are being lead down, and whether it is leading to ivory towers or limestone walls.

CORRECTIONS RISES:

AT WHAT EXPENSE?

Just one day after former Governor Wilson vetoed pay raises for other state workers, negotiators for correctional officers agreed to a one-year, twelve-percent pay raise. (vi) According to the *Sacramento Bee*, officers' top pay will rise from \$46,200 to \$50,820 a year. Conversely, instructors at state universities make on average between \$32,000 and \$37,000 per year. (vii) When it was alleged that the prison guard union's \$1.5 million in contributions to Governor Wilson influenced this unique agreement, the Governor's spokesman Sean Walsh called the allegations “outrageous.” The entire package will cost \$80 to \$100 million in the new budget.

This should come as no surprise to Californians. Over the past decade, corrections has grown as a portion of the general fund at a greater rate than any of the other four major budget categories. In the last 10 years, Corrections has increased 60 percent while higher education decreased by 3 percent in actual appropriations. (viii) Corrections witnessed its greatest increase between 1990 and the present. From 1993-1995, for example, prison spending reached its height as a percent of General Fund expenditures making up approximately 8.7 percent of the general fund. This is more than twice

Corrections' share of General Fund expenditures in fiscal year 1984-1985 (4.1 percent) and more than three times Corrections' share of fiscal year 1978-1979 General Fund expenditures (2.7 percent).

Higher education, on the other hand, has seen decreases in general fund spending for the past eight years. From 1993-1995, baccalaureate spending reached its all time low at 12 percent of the General Fund. Following the passage of Prop. 98, amended to include community colleges in 1990—which specifies minimum spending levels for K-14 education—the share of General Fund expenditures allocated to higher education increased modestly until the fiscal year 1998-1999 budget was signed. Whether these increases will continue is suspect since the trend has been to decrease higher education in non-surplus years. The result has been increased out-of-pocket expenses for students.

In the past 33 years, tuition costs in the UC and CSU systems have increased dramatically. Between 1980 and the present, fees have risen 303 percent in the UC system and 485 percent in the CSU system. In this same period of time, 21 new prisons have been built and prison guard salaries have more than doubled. On the other hand, only one CSU campus has been built and students are forced to take out more in loans because of very limited resources in government grants.

According to the California Department of Corrections, it currently costs approximately \$22,000 to imprison one inmate for a year. With an annual average cost of \$4,022 in tuition fees, approximately five students could attend the University of California for the cost of housing one inmate. Additionally, at an average annual cost of \$1,868, approximately 12 students could attend the California State University system for the cost of imprisoning one inmate.

The minimum period of incarceration for inmates sentenced to 25-years-to-life under California's "Three-Strikes" law is 21.75 years (85 percent of the minimum sentence). This means that, in 1998 dollars, a defendant sentenced to life under "Three-Strikes" will cost a minimum of \$467,500. This translates into approximately 116 students who could have attended a University of California campus. Conversely, 250 students could have attended a California State University for that amount.

The current population of California inmates serving life under "Three-Strikes" costs \$95 million for one year. The state could send 23,893 students to UC or 50,878 students to CSU for that same amount.

DISPROPORTIONATE REPRESENTATION IN SCHOOLS AND PRISONS FOR MINORITIES

The latest census estimates reflect a continued shift in California from a predominantly white population to one with Hispanics and Asian/Pacific Islanders increasing in majority. The same shift is also reflected in enrollment to the state's public universities and prisons. The impact of California's policy decisions regarding the budget has adversely affected the poor, working/middle-class and minority groups (mainly African-Americans). For example, the rise in university fees has greatly increased the out-of-pocket expenses for students. Students are becoming more reliant on loans rather than grants and scholarships, which have become increasingly limited because of the lack of funding in higher education.

Two years before Governor Wilson took office, the cost of attending the University of California represented about 5 percent of the national median income for a white family, 8.6 percent for an African-American family, and 7.4 percent of the median income for

a Hispanic family. For all families, of any race, the cost of sending someone to the University of California has increased. For a white family, the cost of sending a child to UC rose to 8.7 percent of their median income—a significant rise.

But for African-American families, today, sending a child to the UC system would represent 14 percent of the black median family income—almost double the percentage it was a decade ago. For Latinos, the cost of sending a child to UC consumes twice the portion of median family income (15 percent) as it did in 1989.

Total male enrollment in the University of California and California State Universities has decreased dramatically over the past decade. The numbers have decreased 8 percent from 200,021 to 183,626 full-time male students enrolled in the past eight years. (ix) By contrast, male incarcerations have increased 59 percent from 90,807 to 144,392 in this same period of time. (x) The trends in racial composition between prisons and higher education facilities reveal startling disparities for minorities.

African-Americans currently make up 7 percent of California's population. (xi) Between 1990 and 1997, African-American male enrollment in the CSU and UC systems decreased from 8,974 to 8,767 full-time students. During that same period of time, the total number of incarcerated black males increased from 32,145 to 44,617. While African-American male enrollment numbers decreased by 217 students, 12,147 black male inmates were added to the CDC.

The difference reveals that for every African-American male subtracted from a UC or CSU, 57 were added to a state correctional facility. The ratio of imprisoned African-American males to those in state universities is currently five to one. The numbers are shockingly

up from just two years ago when the ratio stood at a surprising four to one. African-Americans make up 7 percent of the state population, yet blacks only account for 5.5 percent in the UC and CSU systems (both graduate and undergraduate programs) while making up an astonishing 31 percent of CDC prisoners.

Hispanics currently make up 28 percent of California's population. (xii) From 1990-1995, California experienced a net gain of 1,414,000 Hispanics. The gain is also illustrated in the enrollment numbers to California's public universities during the last seven years. Between 1990 and 1997, Latin males increased from 22,552 to 30,454 full-time students enrolled in the state's four-year public universities.

At the same time, the Hispanic male inmate population grew from 29,679 to 53,881 inmates in California correctional facilities. While Latin male enrollment increased by 7,902 students in the UC and CSU systems, the number of Latin males in the CDC increased by 24,202. Put another way, three Latin males were added to the prison population for every one added to California's four-year public universities.

As the Hispanic population grew from 26 percent to 28 percent in the last eight years, the Hispanic male population grew from 11 percent to 17 percent in public universities and from 31 percent to 35 percent in the CDC. Compared to their overall representation in California, Hispanic males are underrepresented in our public universities and overrepresented in our prisons.

TRENDS IN THE PAST TWENTY YEARS

The trend in California for the past twenty years reveals startling increases in incarceration. Since 1990, university fees are soaring and the inmate population has increased substantially in contrast to declining crime rates.

From 1967-1975, former President Ronald Reagan served as California's governor. During Reagan's gubernatorial term, there was an actual decrease in prison population and a total university fee growth of \$1,028 (1998 "constant dollars"). The total prison population from December 31, 1966 to December 31, 1974, decreased by 2,726 from 27,467 to 24,741 inmates housed in the CDC.

Although university fees did increase during Reagan's eight-year term as governor, higher education maintained its percentage share in the budget at 16.8 percent of the general fund in the 1967-1968 budget to 16.7 percent in the 1974-1975 budget. Conversely, corrections witnessed a decline in a percentage share of the general fund dropping from a 4 percent share of the General Fund in the 1967-1968 budget to a 3.2 percent share in the 1974-1975 budget. Under Reagan's term as governor of California, the state maintained its focus on educating rather than incarcerating.

Under Edmund G. (Jerry) Brown Jr., California witnessed an increase in total prison population and a \$437 increase in public university fees. The total prison population grew from 24,471 inmates as of December 31, 1974 to 34,640 incarcerated as of December 31, 1982 (a difference of 9,899 inmates). While university fees had a nominal increase, higher education's percentage share of the budget fell from 16.8 percent of the general fund in the 1975-1976 budget to 14.6 percent in the 1982-1983 budget. The difference represented a 13.1 percent decrease in actual dollars not going toward higher education.

It is important to point out that Proposition 13 was enacted during Brown's term as governor. The law cut back property taxes significantly straining the state's ability to raise money. This caused a crisis mainly at

the local level which required state intervention to shore up some of the damage. Corrections reached its lowest level in general fund percentage share at 2.7 percent in the 1978-1979 budget, but maintained its 3.2 percent share throughout most of Brown's eight-year term.

Following Jerry Brown as California's governor from 1983-1991 was George Deukmejian. Under Deukmejian, the state witnessed an explosion in prison populations. As of December 31, 1982, the total population of the CDC stood at 34,640 inmates. On December 31, 1991, the prison population stood at 97,309 inmates or a difference of 62,669 inmates. The CDC budget increased from a percentage share of 3.7 percent in the 1983-1984 budget to 6.7 percent in the 1990-1991 budget. This represented an 81 percent increase in corrections' share of the General Fund. The total growth in university fees during the Deukmejian era came to \$44 (CSU, \$212; UC, -\$168). Under Governor Deukmejian, California's trend towards incarceration rather than education was set into motion and the stage was set for Pete Wilson.

The prison population during the Wilson administration continued to grow at accelerated rates and university fees experienced the largest increase in the last 32 years. On December 31, 1990, the prison population in California stood at 97,309 inmates. On December 31, 1998, the prison population was estimated to stand at 165,166 inmates or a 67,857 growth in prisoners. (xiii) Between Wilson's administration and former Governor Deukmejian's terms in office, one CSU campus and no UC campuses were built compared to 21 new prisons erected in the same period of time. University fees experienced a total growth of \$2,331, the single greatest growth in the last 32 years.

During the Wilson era, higher

education reached its lowest point as a percentage share of the budget receiving 12 percent in the 1993-1994 budget. Conversely, corrections hit its highest level receiving 8.7 percent in that same year. The trend over the last 16 years has been startling. Overall, under Governor Wilson, the prison population and fees paid by California college students experienced their highest growth versus Governors Reagan, Brown and Deukmejian. Comparatively speaking, Wilson has earned his spot in California's history as the Governor of Corrections.

This research was made possible through generous funding from the Rockefeller Foundation, The Center on Crime Communities and Culture, The Van Loben Sels Foundation and the Pacific Center for Violence Prevention.

The Justice Policy Institute is a policy development and research body that promotes effective and sensible approaches to America's justice system. JPI is a project of the non-profit Center on Juvenile and Criminal Justice.

The authors would like to thank the California Postsecondary Education Commission, Offender Information Services Branch of the California Department of Corrections, Legislative Analyst's Office, Jill Herschman and Jason Ziedenberg, all of whom graciously contributed to the creation of this report.

END NOTES

(i) (viii) (ix) Woolfork, Kevin et al. Aug. 20, 1998. Fiscal Profiles, 1998. Sacramento, CA: California Postsecondary Education Commission.

(ii) (iv) (v) Ambrosio, Tara Jen & Vincent Schiraldi. February 1997. From Classrooms to Cellblocks: A National Perspective. Washington, DC: Justice Policy Institute.

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vi) Furillo, Andy. Aug.25, 1998. State offers correction officers 12 percent pay raise. Sacramento, CA: Sacramento Bee

vii) According to the CPEC, instructors are required to have a bachelor's degree and teaching credentials. Prison guards need only a high school diploma.

x) California Department of Corrections Population Estimates. www.cdc.state.us.ca/

(xi) (xii) Malson, John. Race/Ethnic Report: Population Estimates. Sacramento, CA: Department of Finance.

xiii) Based on a three-year trend data from the California Department of Corrections.

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Architectural Services, Construction, and Funding of California Schools

Mark Kemp, AIA

"Building Community: Perhaps never in the history have the talents, skills, the broad vision and the ideals of the architecture profession been more urgently needed. The profession could be powerfully beneficial at a time when the lives of families and entire communities have grown increasingly fragmented, when cities are in an era of decline and decay rather than limitless growth, and when the value of beauty in daily life is often belittled. Surely architects and architectural educators, as well as the organizations that represent them, ought to be among the most vocal and knowledgeable leaders in preserving and beautifying a world whose resources are in jeopardy."

Building Community

Ernest L. Boyer and Lee D. Mitgang
The Carnegie Foundation
1996

Construction and funding of our public schools is dear to most of California's adults and all of California's parents of school-age children. In general, however, there is a total lack of understanding by the general public and politicians of the overall process. In November, the voters of California approved a bond measure for \$9.2 billion for construction, modernization, and

rehabilitation of both existing and new public school facilities. The vehicle that placed this bond before the voters was the hotly debated Senate Bill SB 50.

Since the passage of Proposition 13, the vast majority of funding of public school construction has been accomplished through state funding via the State Allocation Board (SAB) and the Office of Public School Construction (OPSC). Prior to Prop. 13, state funding of public school construction was viewed as a fallback austerity program for those districts that could not float a local general obligation bond for their local schools. Subsequent to Prop. 13, the state's funding mechanism has become the norm for our public schools.

In the 10-year period between 1986 and 1996, California's voters approved \$5.4 billion for K-12 school facilities and \$4.4 billion for higher education facilities. The State Department of Education estimates California's 10-year need for K-12 level school facilities to be approximately \$41 billion. In addition, it is estimated that the 10-year need for higher education facilities is \$13 billion.

Traditionally, the revenue supply has never kept pace with the facility needs. As a result, other revenue streams have been developed and utilized, including local general obligation bonds, requiring 2/3 voter approval, Mello-Roos Community Facilities Districts (CFD), Certificates of Participation (COP), and developer

fees. All of these revenue sources ultimately affect the costs to consumers. The most highly contested method has been developer fees which are assessed, on a square foot of construction basis, against both residential and commercial development. These fees have been upheld through several court battles including the "Mira," Hart," and "Murrieta" decisions. Needless to say, developers lose financially when they are required to pay fees on every residential unit they construct.

The California Legislature continues to look for strategies to provide a level of cost containment in the construction of public schools. Once again, a suggestion for the development of "stock school plans" is being investigated. The theory is to save costs in planning, design, and contract document development by re-using a proven set of contract instruments. One issue rarely discussed is how the use of stock plans would influence the environmental quality differences required in various grade-level organizations, such as elementary, middle school, junior high, and high school (K-5, K-6, K-8, 7-9, 6-8, 9-12, and 10-12). School population variations for urban-size schools versus rural school populations are also critical considerations to be addressed. Planning and design alternates are not simply adjusted with additional classroom wings. The administrative and support facilities must also be adjusted proportionally to population growth. Climatic, topographic, seismic, utility and site configuration issues vary dramatically from district to district and region to region. These differences can greatly influence structural, mechanical and electrical considerations. Variations in district curriculum cause differing functional relationships that greatly influence architectural planning and design. Finally, pervasive diversity in codes and building regulations would cause stock plans to quickly become obsolete

without complete updating to meet the current local conditions and requirements in effect at the time of need.

The strategy of joint-use facilities is being explored by the legislature. These facilities would be funded jointly with other government agencies, and shared by students for educational use and the general public for recreation and other after-hour uses. Such facilities include playgrounds/parks, libraries, multi-purpose rooms, gymnasiums, auditoriums, pools and tennis courts. The concept of joint-use facilities between school districts and governmental agencies, e.g., cities, counties, etc., can work extremely well when the design and planning are well managed.

Increased use of low-budget relocatable temporary classroom buildings is another favorite "quick fix" to meet demands for additional school facilities. Architects, and even school administrators, recognize that there is nothing more permanent at a school than a temporary relocatable classroom. Rarely do the relocatables move off of a school site once they are placed in operation. The initial cost of relocatables is reasonably low. This is largely obtained through mass factory production by reducing labor costs, plus the use of standard building materials and construction procedures. The Office of the State Architect (OSA) requires districts to acknowledge in writing that "certain requirements of durability have been waived" relative to the set-up of relocatable classrooms. The long-term maintenance and operation costs for the standard relocatable classroom building is very high. Many of these buildings deteriorate and require complete demolition and replacement within a 15-year life span. Interior and exterior finishes, doors and hardware, and equipment are generally low quality and cost. Proper site accessibility modifications and utility service installation can drive the

total installation costs of a relocatable classroom to within the range of permanent construction costs in many cases. Often, building modifications beyond the normal production set-up will exceed similar costs associated with permanent construction.

The Field Act which requires a higher level of safety in public school construction has also been targeted for increasing school facility costs. This act was enacted for all of California's public school facilities following the devastation of the 1933 Long Beach earthquake. These legal requirements force all public schools to be designed to a higher standard of safety than is required by the Uniform Building Code, commonly used for the majority of private and commercial facilities. The OSA is responsible for the enforcement of these requirements. These added requirements do, in fact, add cost to public school construction of approximately three percent, or approximately \$150,000 for a new 900-student elementary school. The small cost for securing the safety of California's school children appears to be a well justified expenditure, especially when reviewing the safe performance of our public school facilities during the 1994 Northridge earthquake. Several lives were lost in buildings that conformed only to the minimum building codes—the same codes being suggested for public schools to save initial construction costs. The financial damage to public schools was small, compared to many of the private and commercial facilities that fully collapsed in the Northridge earthquake. This again exemplifies the importance of wise initial investment strategies when public tax dollars are being invested in new schools.

Additionally, the OSA provides standardization for code enforcement statewide for public school design and construction. This would be sacrificed

if the authority reverted to the local building department level model. Many communities do not have the expertise or the manpower in their building departments to review a public school facility adequately and in a timely manner. The existing workloads in many large city building departments would drastically impact the time required to get approval of a proposed school facility. Some cities, the local architectural review boards, city ordinances, and other agency project review requirements would add time and increase cost. Removing the "one stop" project review source and standardized code enforcement provided by DSA would be detrimental to the desire to streamline approval time and reduce school construction costs.

Developers have lobbied legislators fallaciously, transferring the focus of perceived excessive school construction costs as an issue caused by the architectural profession. In a direct attack against the architectural profession, there has been the erroneous accusation that professional fees for public school architectural and engineering services are excessive. As always, the architectural profession has failed to educate the general public as to what comprehensive architectural services are about relative to the fee charged. An example of the total lack of understanding of construction costs for public schools was brought to light when a state assembly member had been informed by developers that public schools could be built for 25 percent of the cost currently being expended. This would calculate to approximately \$30 per square foot. No developer can provide cheap school facilities for only \$30 per square foot. This is a prime example of misinformation circulated to refocus attention away from the developers who have been saddled with high mitigation costs. The developer is thereby choosing to shift the responsibility on to others—

in this circumstance the architectural profession. The question of who should mitigate school construction costs has been and will continue to be a highly debated question. The developer's potential responsibility for financial mitigation, however, should not be alleviated with incorrect accusations against the architectural profession.

The current state fee schedule for Architectural and Engineering (A&E) services for public schools was established in the mid 1970s, based upon a sliding percentage scale of the construction cost. Under this schedule, the smaller the project, the higher the percentage fee and the larger the project, the lower the percentage fee. The major misconception over the past 25 years has been that as inflation has increased the cost of school construction, the A&E team received a proportional fee increase due to its link to construction costs. In fact, as inflation has driven school costs higher, the A&E team has actually received a lower percentage fee for the same project as a result of the sliding scale state fee schedule. As if this were not detrimental enough, the requirements for professional services associated with public schools have expanded over this same period. As well, an onslaught of increased litigation and consultant engineers' fees are facing the profession. Thus, the outcome has been several fold. In an effort to remain profitable and stay in business, architects and their consulting engineers have slowly reduced the level of professional service provided, generally through a reduction in hours expended on projects. Correspondingly, this reduction in services directly results in more errors and/or ambiguities, causing an increase in change orders and dispute litigation. Ultimately, the result is a higher total project cost to the owner.

In a trend-setting response to the reduction of professional services,

school districts throughout California are displaying signs of accepting the misconception that professional licensed architects cannot be trusted and must be watched carefully to protect the districts against unscrupulous acts by architects and contractors. This attitude is fueled by the construction/project management industry which gains greatly from such attitudes toward the architectural profession. Most of the services included in a project management contract have traditionally and contractually been provided as a part of comprehensive architectural services. The architectural profession failed to resist this influx of competing services with the misconception that it would reduce the scope and relieve the A&E team from many of its duties. The apparent outcome is that owners have been willing to extend more professional fees for their projects. These fees, however, do not go to the A&E team which contractually maintains all of the liability. These additional fees have been directed at project management in the hopes of reducing architectural and engineering change orders as well as potential litigation. The outcome for the architectural profession is more pressure from a third party project manager to provide the comprehensive services due to the owner. The question has been squarely placed in front of the architectural profession. How it responds will influence the landscape of architectural practice for decades.

Ultimately, California will continue to grow, necessitating more public school facilities and rehabilitation of our rapidly aging schools. Every desire comes attached with some level of cost. More facilities and remodeling require more funding, whether local or state-wide. District budgets are constantly stretched to provide students and staff with facilities and materials to educate California's most important resource—

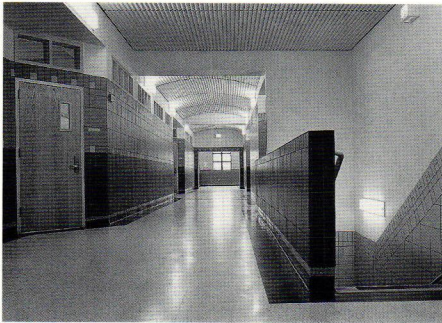
the children. Funds for maintenance and operations are generally a common target. Constructing cheap school facilities will ultimately come at a greater cost to California's future. Reducing professional fees will come at the cost of reduced services which will ultimately be recognized in increased change order costs and potential expensive litigation costs to the owner.

Californians must acknowledge the wisdom of age-old sayings: "You get what you pay for." "Penny wise and pound foolish." "Pay now, or pay later."

Architects must accept and maintain the ethics, ideals, and moral standards in providing complete and comprehensive services upon which the profession was founded. Selling services short will result in the potential erosion of respect and the profession's role as others vie to fill the continuing need for such services. Architects must speak out, educating their clients and the general public. The entire profession needs to accept its responsibility and liability to provide complete and comprehensive services to owners, and, accordingly, charge fees that will provide for this level of services.

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1998 C.A.S.H./AIACC Selected Design Awards



BERKELEY HIGH SCHOOL
EXCELLENCE AWARD-MODERNIZATION
VBN Architects
WLC Architects, Associate Architects
Berkeley Unified School District



WINDSOR MIDDLE SCHOOL
HONOR AWARD-BUILT PROJECTS
Quattrocchi Kwok Architects
Dev Architects, Associate Architects
Windsor Unified School District



PETER CANYON ELEMENTARY
HONOR AWARD-BUILT PROJECTS
Trittipio & Associates
Tustin Unified School District



EAGLE PEAK MIDDLE SCHOOL
EXCELLENCE AWARD-BUILT PROJECTS
AXIA Architects
Ukiah Unified School District

*The Coalition for Adequate School Housing and
The American Institute of Architects, California Council*

Selected 1999 Leroy F. Greene Design Awards



ROSEVILLE HIGH SCHOOL
MERIT AWARD-MODERNIZATION
Williams + Paddon Architects & Planners
Roseville Joint Union District



GARFIELD HIGH SCHOOL
EXCELLENCE AWARD-BUILT PROJECTS
HMC Group Architects
San Diego Unified School District



OCEAN PARK SCHOOL
MERIT AWARD
BUILT PROJECTS
Dougherty & Dougherty
Santa Monica-Malibu
Unified School District



MARIA CARRILLO HIGH SCHOOL
EXCELLENCE AWARD
Built Projects
TLCD Architecture
Santa Rosa City High School



Campus Architecture is Now Campus Planning

*Richard Thompson, AIA, AICP
David C. Martin, FAIA*

With notable exceptions, most American college and university campuses are substantially “built-out.” Building booms after the second world war, again in the 1960s, and most recently during the 1980s, saw many campuses constructing new facilities at a furious pace to meet demand.

Traditionally, American educational institutions developed a long-range vision for their future and have generally followed these plans. University planners and architects today, however, are facing new realities. With a new era of projected growth on the horizon, campuses must address constrained fiscal resources, the urgent need to upgrade aging facilities, and perhaps, most importantly, the problem of accommodating growth within the context of increasingly “built-out” environments. Finding creative ways to infill existing campuses, while maintaining and enhancing the quality of the campus environment, is becoming more and more important in the competitive world of college recruitment.

We need a new design approach that integrates the grand vision of the original campus plan with current programmatic requirements on today’s campus. The architecture of new buildings at many universities has become an exercise in micro-planning. In our view, we need to merge planning and architecture to create a new approach to “place-making.”

As architects, we are familiar with the notion that creating places within campus environments is a critical com-

ponent of campus design. Indeed, the very word “campus” (from the Latin “field”) evokes images of architecturally harmonious buildings grouped to frame lawns, quadrangles and courtyards. This ideal of the campus environment embodies the “collegiality” sought after by today’s colleges and universities. The introduction of distance learning and the internet do not obviate the need for “place,” where the one-to-one interchange of ideas and thoughts remains a valued component in the educational process.

THE EVOLUTION OF AMERICAN COLLEGE PLANNING

From their earliest inception, American institutions of higher education followed the “collegiate” ideal drawn from medieval English universities, where students and teachers lived and studied together in small, tightly organized colleges, such as Oxford and Cambridge. In the true American spirit, however, universities in this country have always been innovative in their adaptations and in the process have developed their own unique character. While remaining faithful to the “collegiate” spirit of the English precedent, they have departed from tradition in several significant ways. First, they created separate colleges at separate sites, each a community unto itself, often located in the countryside.

This romantic notion of the noble center for higher education, set in nature further reinforced the concept of the college as community or city, and thereby made its design an exercise

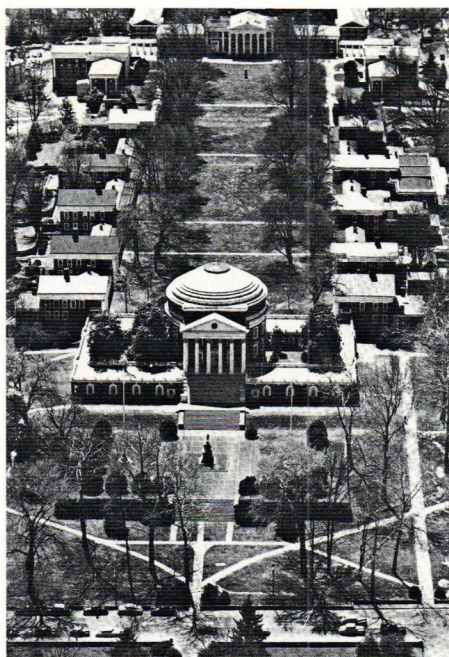


Fig. 1 Jefferson's University of Virginia

in urbanism. Thomas Jefferson's "Academic Village" at the University of Virginia became the classic American collegiate ideal. (Fig. 1)

Secondly, from the outset, American colleges departed from the cloistered environments of the European models, favoring a more open plan with buildings placed graciously in the landscape. The word "campus" gradually acquired a broader meaning in American campus planning, encompassing not just the physical qualities of the American university, but its spirit as well.

Finally, and perhaps most importantly, while American universities have always been compared physically to cities—self-contained, complex and subject to growth and change—they differ markedly from other built environments. Unlike cities, educational institutions have unique purposes and ideals. Historically in America, their built form not only met program needs, but also aimed to express educational ideals. These expressions range from

colonial Harvard, with its open quadrangles linked to the nearby community, to the Beaux-Arts plans for new American colleges at the turn of the century, reflecting the new American optimism by providing order and system to the unfettered, chaotic growth of our burgeoning industrial society.

To meet today's aspirations, campuses are increasingly looking to their own planning origins for direction and guiding principles, often yielding useful insights for infill construction.

Here we want to examine two very different universities, and how our experiences on each campus offer similar lessons. Both emphasize the need for thoughtful micro-planning that draws heavily upon the principles defined in each campus' original master plan and emphasizes "place-making" as indispensable to both the planning process and the architectural design of individual buildings.

THE UNIVERSITY OF CALIFORNIA AT IRVINE

The University of California at Irvine (UCI) is the quintessential suburban university campus. The master plan for this entirely new campus of the University of California system was developed in 1963 by William Pereira, planner both for the school and the surrounding new community of Irvine, 40 miles southeast of Los Angeles. Pereira envisioned a utopian community, one in which the university would play a central role. To establish the link between town and gown, he proposed a town center that would contain civic buildings for the emerging City of Irvine, linked by a pedestrian bridge to the campus core. While much of Pereira's vision for the university has been realized, his dreams for a civic center never materialized, and, as a result, the campus still lacks a major focal point at its heart.

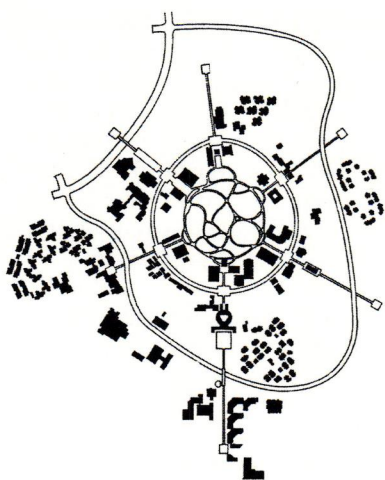


Fig. 2 Pereira's Radial Plan for UC Irvine

His concept for the campus was a radial plan of concentric circles with pedestrian walkways extending outward through the rings, like spokes of a wheel (Fig. 2). Interestingly, this concept seems to have originated with then university president, Dr. Clark Kerr. Kerr drew his inspiration from the German economist, von Thuman, who had developed a plan for an ideal city based on concentric circles. At the center of the plan was to be a landscaped park area surrounded by a circular pedestrian walkway (the "Ring Mall"), a quarter mile in diameter. The walkway was to contain (to Pereira's credit) underground utilities serving the entire campus. Around this ring, six quadrangles were planned, one for each of the basic college disciplines—humanities, social studies, life sciences, physical sciences, and engineering—with a "gateway quad" to contain administration, student union, and central library functions. Working from the center out, academic areas were clustered around the central open space with the outer rings providing campus housing, research and athletic facilities. Parking, in a classical suburban format, was to be distributed around the ring road at the periphery

of the academic quadrants, providing access both to the academic cores and to the housing and other activities on the outer ring.

The central park, now called Aldridge Park (after the founding chancellor, David Aldridge) remains an unadorned, pristine park at the heart of the campus. The quadrangles have generally developed under the broad outline of Pereira's plan. However, the often haphazard placement of stand-alone buildings, scattered across a confusing landscape of meandering pathways, informal plantings and shapeless parking lots (and, of course, the gargantuan scale of the campus itself), have obscured Pereira's original organizing geometry. A futuristic campanile, planned by Pereira at the apex of all the pedestrian "spokes" within the park might have helped to combat this disorientation, but was unfortunately never built.

In 1978, David Neuman, FAIA, was appointed campus architect, and, until his departure to Stanford in 1989, presided over an unprecedented boom in campus growth at UC Irvine. One of his most publicized efforts was to commission a long list of prominent architects for individual buildings,

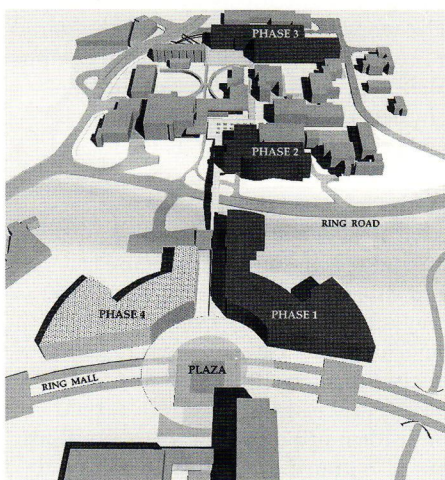


Fig. 3 Fine Arts & Humanities Village

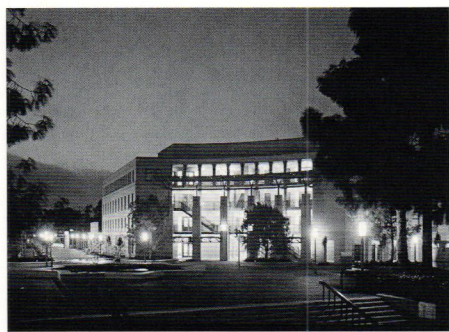


Fig. 4 Humanities Building at the Ring Mall Plaza

including Frank Gehry, James Stirling, Michael Wilford, Robert A. M. Stern and Charles Moore. These new inventive and exciting buildings, while certainly an improvement over the repetitive often bland architecture of the original campus buildings, have for the most part done little to clarify the campus organization or create a “sense of place.” The enormous scale of the entire campus made all the more important the creation of defined, outdoor, open spaces, even cloistered environments.

In 1992, the university engaged AC Martin Partners to design three new academic buildings as the next increment of development for the Fine Arts and Humanities quadrant. Rather than simply place more buildings in the “park-like” setting, we strongly advocated using these new infill structures to define outdoor space and create order and identity for the Humanities and Fine Arts quadrant. Prior to initiating design of the buildings, a series of these detailed urban design studies (micro-planning) were conducted—attempting to create a “sense of place” for this portion of the campus. Each of the new buildings was carefully placed within existing buildings to create pathways and courtyards to help foster a new urbanism—a more pedestrian friendly environment. (Fig. 3) Phase I (completed in 1997) at the intersection of one of the pedestrian “spokes” of

Pereira’s plan and the “Ring Mall” uses the building mass and edges to create a plaza at this pedestrian cross-roads, strengthening circulation patterns in support of Pereira’s campus master plan.

Placement of each building architecturally became an exercise in infill planning: reinforcing the existing buildings, enclosing outdoor space, defining people places—to create a sense of order and make this particular quadrant of the huge campus more human in scale. At the hub, the intersection with the ring road, the architecture of the first phase Humanities Building focused on creating activity adjacent to the plaza. Building circulation was brought to the exterior, creating a “porch” with stairs and corridors surrounding the plaza. The most people-intensive uses were placed on the ground floor all to generate opportunities for “collegiality.” (Fig. 4)

Small, more intimate, open spaces were created in locating Phases 2 and 3 among the existing buildings, developing pathways and connections and, for the first time on campus, building a pedestrian bridge over the sunken automobile ring road, bringing together two academic areas within this quadrant. (Fig. 5) This linkage and tightly organized open space and courtyards were all about “place-making,” creating human scale and orientation to more easily find your way on this



Fig. 5 Pedestrian Bridge over the Ring Road

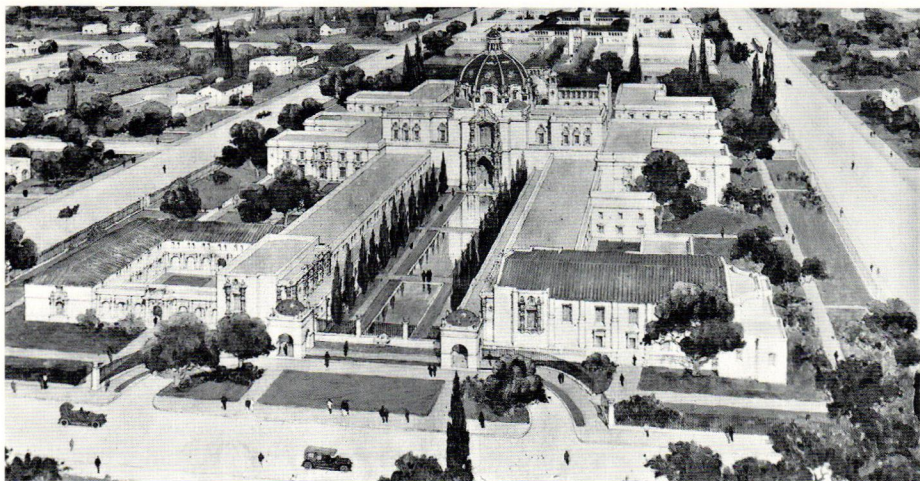


Fig. 6 Bertram Goodhue's vision for Caltech

loosely organized suburban campus.

Our understanding of the original campus plan, its quadrants, ring roads and spokes, became the framework for the creation of special places to define the arts and humanities quadrant with more human-scale places for interaction. By going back to the original premises of the master plan (strong pedestrian spokes linked by the "Ring Mall") and using specific building placement and design to reinforce these principles and define space, each building is making a stronger contribution to creating a campus environment conducive to the learning experience, even in what seems an undisciplined setting.

CALIFORNIA INSTITUTE OF TECHNOLOGY (CALTECH)

In contrast to the isolated location and vastness of the University of California at Irvine, the California Institute of Technology (Caltech) is a small, densely organized, urban campus in a suburban residential neighborhood of Pasadena, California.

Master planned in 1917 by the renowned Bertram Grovesner Goodhue, the Caltech plan was an extension of his ideas for the San Diego Fair of 1915. The sense of vivid contrast found in an

"idealized Latin City" was the quality Goodhue sought for Caltech: the contrast between sun-filled piazzas and shaded narrow streets, a central plaza balanced by secluded patios, sunlit gardens offset by cool arcades, the density of the urban campus sharply delineated by walls from its residential context. This Mediterranean, Romantic approach, coupled with his background of Beaux-Arts formal planning, along with client demands to maintain flexibility for future unknown expansion and to preserve a number of magnificent live oak trees on the site, led to his 1917 master plan. The essence of the plan is captured beautifully in a rendered perspective that accompanied Goodhue's report to the trustees. (Fig. 6)

On its surface, the plan seemed to follow Beaux-Arts formal planning dictums of axial organization and hierarchical spatial arrangements. However, the genius of Goodhue's plan was not just this formal strategy, but the plan's ability to accommodate variety and its juxtaposition of symmetry and asymmetry. The plan was organized by two major axes with buildings tightly arranged so that the edges defined a series of well-formed, public spaces. (Fig. 7) The loft type buildings

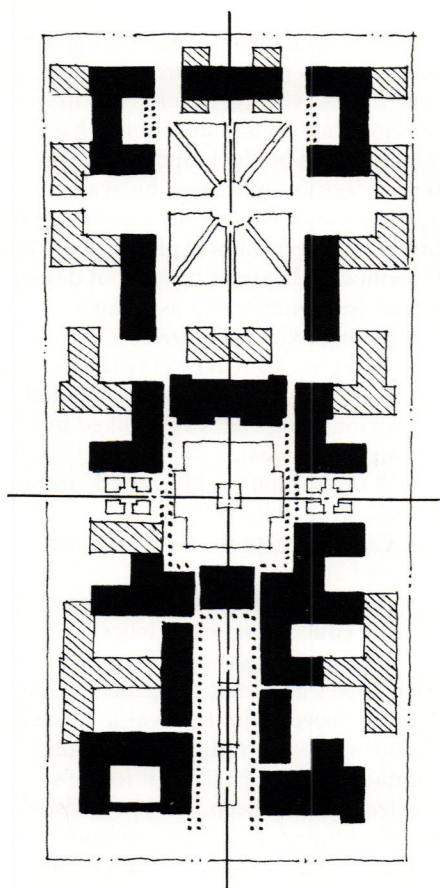


Fig. 7 A Bi-Axial Plan

(to accommodate change) and the arcades that linked these spaces were symmetrical only in their relationship to these public areas. Moving away from the center toward the edges of the site, buildings became increasingly more specific to their functions and more asymmetrical in their massing. This complexity was based on Goodhue's use of the traditional city as a model, where public, more formal facades are presented to the street, while towards the back they become more loose and informal.

Goodhue's master plan and design principles, as well as the five buildings he designed on campus before his death in 1924 (Fig. 8), established the unique character of the Caltech campus and



Fig. 8 Kerckhoff Laboratory

influenced building at Caltech well into the 1940s and 50s. By the 1960s, the original south campus had been built out in general accordance with Goodhue's plan, and demands for growth were being accommodated to the north on additional land acquired by the Institute. Ostensibly organized around an extension of Goodhue's original north-south cross axis, this period of expansion followed more informal planning principles of the day, which tended to place buildings as objects in park-like settings or, as was often the case, building on the last available paved parking lot. What was lost, however, was the "sense of place" created in the early campus by the more tightly organized buildings whose adjacencies reflected an understanding of the importance of open spaces, as so clearly established in Goodhue's original plan.

As campus expansion continued, the Institute purchased more land, and in 1989, commissioned a long-range, master plan update to accommodate expansion into the millennium and, at the same time, address concerns about that growth by the City of Pasadena. Building upon Goodhue's original planning principles, this new master plan organized the new portions of the campus by continuing the axial planning principles used so successfully in the initial, southern portion of the campus. Three primary axes now serve as the principal circulation routes and

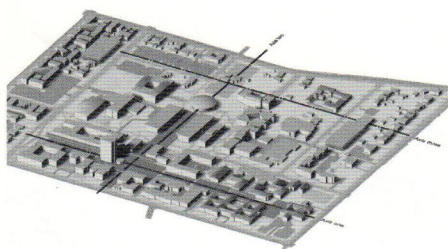


Fig. 9 3-D Campus Model

organizational devices on campus, with secondary courtyards and open spaces providing access to these sub-areas.

However, while the new master plan prescribed ultimate building entitlements, the land areas designated for new buildings provided little definition as to specific building locations or corresponding open space areas. The master plan also left unresolved a series of specific micro-planning issues needed to guide phased new development, as well as approaches to infill and upgrading of the existing campus.

TODAY'S CAMPUS CHALLENGES

Caltech is one of the nation's foremost institutes of scientific education and research. However, like other small, urban university campuses, Caltech must now address critical development issues: how to meet demands for continued growth within a constrained urban environment and how to achieve new and changing academic objectives and upgrade an aging campus in the face of increasing competition for faculty, students, and donors to assist in financing its future.

In 1995, in anticipation of new growth on campus, administrators and planners recognized the need for more specific planning and urban design guidelines to direct this growth. Caltech planners commissioned AC Martin Partners to prepare a "master plan enhancement program" to assist the campus in addressing new challenges facing the Institute.

Two fundamental decisions at the outset of this planning process set the tone for its evolving nature. The first was to establish a philosophical basis which would be the foundation for future decision-making. This was accomplished by carefully examining the original campus master plan by Bertram Goodhue and extracting a set of design principles, summarized as follows:

- Strong axial organization.
- Campus character defined by a hierarchy of open spaces (created by building edges and linked by open arcades).
- A related, but richly varied, architectural style.
- Careful integration of landscape and architecture.
- A campus designed to reinforce the educational experience.

These principles still resonate with power and logic as guidelines for campus growth and renewal in modern California. By restating these fundamental premises, in light of today's challenges at Caltech, a clear yardstick was developed to evaluate campus planning and design solutions as they would evolve.

The second decision was of a more practical nature and involved developing a three-dimensional computer model of the entire campus. (Fig. 9) This tool became instrumental, not only in analyzing overall campus growth and change, but also in examining specific micro-planning issues for various districts and building complexes within the campus and communicating these ideas to campus constituents.

DEVELOPING THE NEW NORTH CAMPUS

The 1989 Long-Range Master Plan Update designated the northwest quadrant of the campus for biology, chemistry and chemical engineering classrooms and laboratories. More recently, a near-term need has been identified for a first-phase increment in

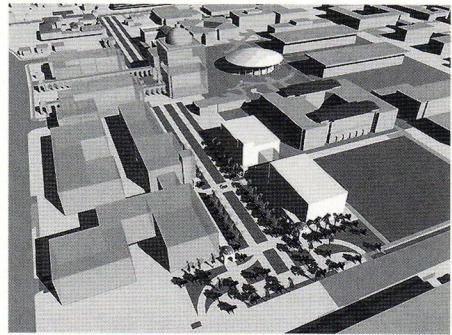
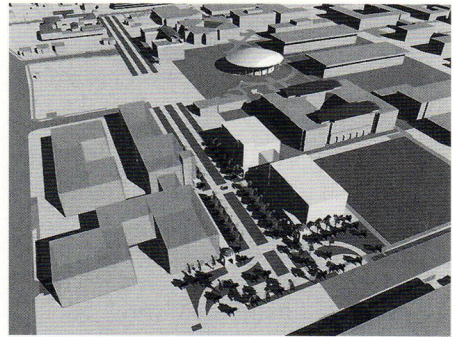
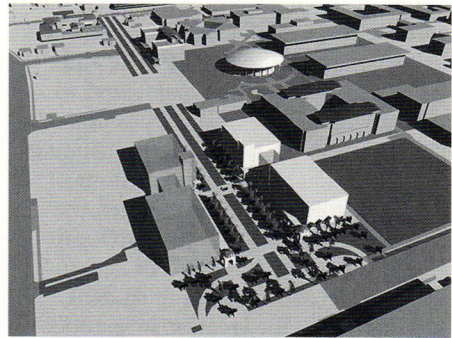
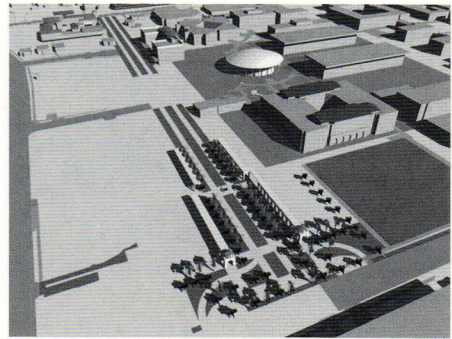
the form of a new Biological Sciences Laboratory of approximately 100,000 square feet. Since the long-range master plan for this portion of the new campus only defined general land use areas, with specific height density and set-back entitlements, AC Martin Partners' planners were commissioned to define specific building sizes, configurations, open-space areas and, ultimately, the most appropriate site for the planned first-phase increment.

Using the three-dimensional computer model for the campus, and applying specific height set-back and FAR (floor area ratio) criteria from the master plan, a model was created to illustrate the ultimate "build-out" for this quadrant of the campus. Drawing upon the planning principles derived from Bertram Goodhue's original master plan, as well as specific building criteria for laboratory and office type structures, this urban design plan reasserted these principles by creating a series of open spaces, classified by their public and semi-public nature, and specific building sizes, locations and discrete increments to meet academic program demands. (Figures 10a, 10b, 10c & 10d)

These visualizations of the ultimate "build-out" for this specific quadrant of the campus allowed campus planners to work with administration, faculty, and the board of trustees in selecting the location of the first-phase increment without compromising subsequent development nor the intimate relationship with outdoor space so critical to the quality of the campus environment at Caltech.

An interesting sidelight of this process has been that the visualizations utilized in these planning studies have been extremely useful in fundraising efforts for the first-phase Bio-Sciences Laboratory building.

IMPROVING THE CAMPUS ENVIRONMENT
In concert with ongoing efforts to



Fig's. 10a, 10b, 10c, 10d



Fig. 11 The Caltech Bookstore

improve the quality of academic programs, Caltech has also focused considerable effort on improving the student living environment, food service and other auxiliary functions. Integral to this program are a series of physical improvements to the campus, including the expansion and improvement of the bookstore and student center, the creation of campus gateways to more clearly define entrances to the campus, the remodel and upgrade of student housing areas, the creation of outdoor activity places on campus, and the improvement of campus signage and landscape. The following pages illustrate two examples of this improvement program.

CREATING A STUDENT HEART

Located in the eastern portions of the original campus, and surrounded by student dormitories and the famed Athenaeum Faculty Club (designed in the 1930s by Pasadena architect, Gordon Kaufman), the Caltech bookstore was in dire need of remodel and expansion to meet more contemporary needs of a modern scientific institution. Not only had it failed dismally as a center for student life, but its design, a brutal, poured-in-place concrete style, popular on college campuses in the 1960s, was inappropriate next to the quality and elegance of earlier campus architecture. (Fig. 11)

Modeled after successful examples of contemporary private sector bookstores, the interior remodel and expansion focused on creating a “place”

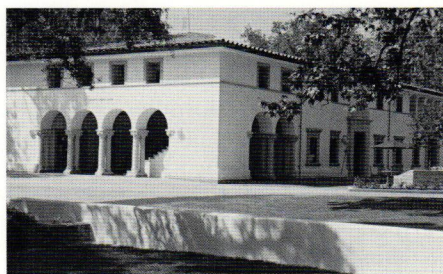


Fig. 12 The Caltech Bookstore

where students could not only buy textbooks, but could meet, read, or have coffee. At the same time, a new exterior for the building was designed to make it more compatible with the older campus environment.

Using Gordon Kaufman’s dormitories as inspiration, the new exterior design applied arched openings, proportioned windows and simple moldings to create visual harmony in this casual student living and activity area of the campus, while landscape plans created a series of outdoor spaces

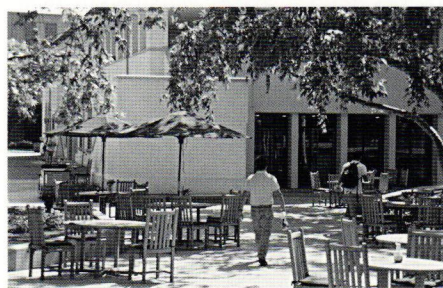


Fig. 13 A New People Place on Campus

for student gathering and dining in support of student life. (Fig. 12)

With the early campus and design principles as benchmarks to measure the quality of design approaches, this project has begun to restore consistency in this quadrant of the campus and to create the collegial environment sought after by Caltech. (Fig. 13)

CREATING VISUAL HARMONY

As the design process evolved for the student bookstore remodel, the

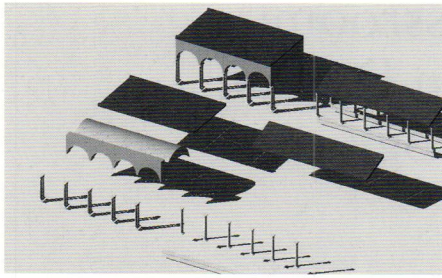


Fig. 14 An Arcade "Kit of Parts"

3-D computer illustrations created to represent the before and after studies for the new exterior made it clear that some of the adjacent dormitory buildings of the same era were also decidedly out of character. Discussions led to the concept of a modular arcade system that could be applied independently to these or other buildings on campus as an inexpensive means of providing architectural continuity. This arcade system could also be used to define public and semi-public open space, and to link existing buildings in



Fig. 15 Gordon Kaufman's Dormitory Arcade

keeping with the original campus planning principles. The concept consisted of a "kit of parts" (Fig. 14) which included a standardized pre-cast column (proportioned similarly to the Corinthian columns of the early Gordon Kaufman dormitories), an arched roof system, or a shed roof above columns (each subject to placement in a different context), and other smaller components to adapt the system at various locations throughout the campus. (Fig. 15)

CONCLUSION

Our experiences at UCI and Caltech suggest several common elements useful for infill planning and design today. First, looking to the planning origins of a specific campus can often provide insights into planning even in today's changing campus environment. Secondly, no matter what type of campus is defined in a university's long-range vision, thoughtful planning and design at a small scale can often yield unique and special places on campus so important to creating collegial environments for learning. Creating "places" on campus is not just a byproduct of buildings to meet academic needs, but it is often the result of planning the open spaces between. Despite Daniel Burnham's admonishments "make no small plans . . ." it is, in our view, these small-scale plans that can give human quality to those grand visions.

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The Campus as Classroom: Engaging Students in Design, Aesthetics, and Ecology

Anna Cummins and Paul Cummins

As an art form, architecture has the potential to stimulate, provoke, and instruct—a potential which is often overlooked in favor of its functional aspect. The idea that architecture at its best can be didactic, as well as aesthetically stimulating and functional, is neither new nor revolutionary. Yet few attempts have been made to extend this concept—that of the educational potential of buildings—into the academic world. By and large, our schools tend to be dull, monochromatic, box-like institutions, inspiring little in the way of learning, as if they sought to contain rather than encourage expansion, growth, and life. Furthermore, in a world which increasingly demands our attention with respect to principles of ecology and conservation, our school campuses rarely conform to even the most basic standards. It is our contention that we should remodel and retrofit our schools and build new schools so that they meet several standards: they should be child-oriented and aesthetically stimulating as well as ecologically sound and educational in and of themselves. Briefly, let us consider each.

Square boxes, linoleum halls, bare walls, blank ceilings, asphalt-covered yards, and dull color exteriors are all certainly low cost and low maintenance. They are also utterly devoid of any consideration for children. Our brains are stimulated by the use of color, imagery, and form. Anyone who has ever entered a Hundertwasser

house, or seen a Gaudi building has felt the childish delight, lightness of heart, wonder, and joy that we deprive our children of by providing them with unimaginative surroundings in which they are to discover and dream. Granted the aforementioned are giants in their fields, however, it doesn't require artistic genius to breathe a bit of life into our otherwise sterile institutions. A truly child-centered campus would have the vibrancy of color, the brightness of skylights, and the vitality of paintings, murals, and children-designed decorations. This is not to say that the curriculum must be dressed up in wild colors to excite real learning, or that a skilled teacher in an unremarkable setting cannot achieve great flights of imagination. However, in environments already replete with adverse learning conditions, why not provide them with every incentive possible to excel? In overcrowded classrooms with one teacher responsible for 30, sometimes 40 to 50 students, why not maximize the available learning sources including the classrooms themselves?

There is another, perhaps more subtle, underlying message imparted by beautifying school campuses which should, nevertheless, not be overlooked. It is one of consideration and respect. Children educated in a classroom where extra time has been taken to provide them with something beautiful, to add color and creativity to their campus, are shown that their education

is important and that they, in turn, are valued. The implications of this to children—many of whom live in a world where they are told daily that they don't matter, that society has little expectations or concern for their success, and whose commute to and from school is more often than not a bleak urban panorama—can be tremendous.

There are ways architects can be more forceful in facilitating this process. If architects across the country were to select one school nearby, to meet the principal and offer to help on a *pro bono* basis to reconfigure and redesign that school's campus and buildings, we believe all sorts of wonderful new projects would emerge. Public school principals are generally too beleaguered to attend to issues of campus beautification. However, if the initiative came from neighborhood architects, and if the children were brought into the process through curricular projects, a whole new consciousness and spirit could be engendered.

Asking that the students be somehow involved in this process serves a number of purposes. At the affective level, it treats them with respect, trust, and gives them a sense of responsibility. These are gifts which they desperately need and respond to, and which serve to assuage some of the alienation they feel towards their surroundings. In addition, it offers them a more direct, tangible connection to their academic environment. In the way that providing an employee with shares of their company inspires greater productivity, allowing children to leave their mark—whether it be through painting part of a mural, planting a tree, choosing a color scheme, or helping design a building—gives them an immediate connection to the campus and might encourage a sense of pride. While the comparison of education to a business may seem distasteful to some, the idea can be universally applied: we tend to work

harder for things in which we have a personal stake or investment.

Beyond instilling them with a greater sense of connection to their campus, allowing students to participate in the design encourages them to begin thinking of architecture as a process, which has a real, physical impact on the environment. Because the majority of us rarely take part in this process, we tend to conceive of the structures we use every day as independent entities which “appear” spontaneously with minimal impact on the environment, rather than forms characterized by an ongoing relationship between materials, space, and subject. We are not asked to respond to, or in any way, interact with our buildings, viewing them as merely functional rather than aesthetically pleasing and instructional. Thus, the connection between building and environment is lost.

As we approach the 21st century, we have reached a point where a better understanding of this relationship is critical to our very survival. Given the premise that we are living in a delicate, ecologically critical time in terms of the health of our planet, that we must begin to reverse trends of excessive consumerism and waste, and that educating the younger generation is our greatest hope for future change, we are missing a tremendous educational possibility: designing our school campuses to be more sustainable. Few would argue with the need to educate children to take better care of our urban ecosystems, to “tread lightly,” yet we do so in buildings that were constructed with no regard for the environment, with materials which may themselves be harmful (both to children and to their surroundings), and which may be highly inefficient in their consumption of precious resources.

“...Academic architecture is a kind of crystallized pedagogy...buildings have their own hidden curriculum that

teaches as effectively as any course taught in them," (David Orr, *Earth In Mind*, p.113). If we concede that architecture may indeed be didactic, what messages are disseminated by these dull-colored, asphalt-ridden institutions, where great pains are taken to hide from us anything natural? To answer these questions, let us look at the learning possibilities of an ecologically minded campus. Educated in a classroom where conservation of water and energy is a concern, children learn to view these resources as valuable and finite, rather than as a limitless store which we can continue to deplete. A measure as simple as a low-energy light bulb, if incorporated into the curriculum, can lead children to begin making the connection between the light switch and the burning of fossil fuels. This, in turn, might be used as a springboard for a unit on energy or electricity. Thus, the campus itself becomes a vehicle for practical instruction. The possibilities are endless: presence of a graywater reclamation system, solar power, bioremediation, extensive recycling, and organic gardening, to name a few. All can be used as the focal points for courses in biology, geology, mathematics, computer studies, and even humanities.

This idea that the school campus can serve as an inspiring and highly relevant tool through which to study the environment and the effect we have upon it is the core principle of an important project headed by the Los Angeles organization, Treepeople, to redesign Los Angeles Unified School District campuses using available funds from Proposition BB. The bond, the largest ever granted for education in Los Angeles, allocated enormous amounts of money solely to repave cracked asphalt parking lots and playground surfaces with *new* asphalt. Given Los Angeles' historically problematic relationship with water,

Treepeople argued against the creation of more impermeable surfaces with more asphalt, thereby channeling more polluted runoff into the bay, increasing the risk of floods, and, in effect, squandering a precious resource. Instead, Treepeople suggested using a percentage of the money designated for repaving to retrofit schools with grass and trees in a more ecologically-sound "green" manner. A corresponding curricula, designed to involve students in the process and increase their connection to their environment, can be used to teach students from a working model about the design, care, and maintenance of their own campus.

The campus as a classroom is an idea that is crying out for implementation. The next generation of leaders will need to be far more attentive to issues of ecological design and sanity. Consciousness always precedes intelligent action. Why not make our school buildings and landscapes an integral element in raising consciousness and places that respect children's need for beauty in their lives?

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Anna K. Cummins is a graduate from Crossroads School in Santa Monica in 1991. She is currently teaching Spanish and Environmental Studies at New Roads School in Santa Monica and working on special projects for TREEPEOPLE.

Notes on Community-Based School Design

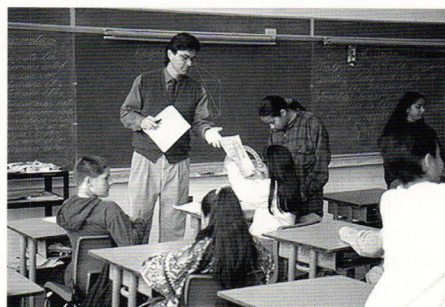
Kerry O'Banion

A school is a terrific architectural challenge for several reasons. First, thanks to its belated but welcome "discovery" by politicians and the media, the dismal state of California schools is now on everyone's mind. Any new school project, therefore, is likely to arouse intense interest and scrutiny by a wide range of groups with diverse, and often incompatible, objectives.

Second, while there is an unprecedented amount of money being raised nowadays for school renovation and construction, decades of neglect have made the need so enormous that this money is being spread very thin. Budgets for individual projects are invariably lean, and it is hard enough just to provide the space for basic educational programs, let alone achieve a decent level of design and workmanship.

Third, a school is more than just an educational facility. Once upon a time, the architecture of a school reflected its importance and integral relationship to community life. It fit comfortably into the community it served, had big windows and a gracious, welcoming entry, and was built to last. A few schools like this remain in older cities, but they are the exception. Most public schools today make even parents feel like intruders. They are designed to keep the students in and disruptive influences out. After-hours use of any kind is a major inconvenience.

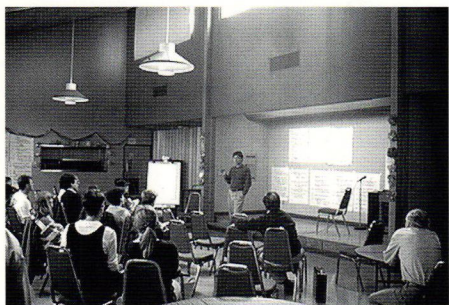
At least in our hometown of Berkeley, where ELS has two schools under construction and a third in design, this model is unacceptable. Because we are



Working with Students

an old city, with most of our residential districts built before the second world war, we are fortunate to have many examples of proud old schools that set a higher standard for design. We are also a university town, and education is arguably the very core of our civic identity. Given the Berkeley tradition of inclusive, and exhaustive, public debate, it was clear from the outset the design of each of these schools would generate widespread interest, and would require an open, community-based design process.

The schools we are working on are part of a much larger capital program by the Berkeley Unified School District to upgrade or replace its facilities. In order to direct the inevitable public interest toward creative and constructive ends, the district established a network of "site committees." Each school project has its own committee, comprised of representatives from each "stakeholder" group: parents, teachers, administrators, students, and neighbors. The site committees are advisory to the district superintendent, but, in



Parents and Community

practice, they serve as the architect's primary resource for review and critique at each stage of design.

Having worked now with three site committees on three very different projects—an elementary school, a middle school, and a high school—we have a few observations about community-based design and where it leads. While our own experience is limited to Berkeley, we've heard similar trends from architects working on other school projects around the state.

Welcome the community into the school.

Today, a new school must be designed as more than a five-day, 8-to-4 operation. The entire community invests in the school, and the school should benefit the entire community. A typical school includes many features which can enhance the lives of parents and non-parents alike—if they are open after hours. Even a modest elementary school library can provide the basics in computers, reference materials, and internet access. A simple gym or multi-use room can host a wide range of fitness programs for adults who don't have money or time for the health club.

As important as after-hours use can be to adults in the community, it is sometimes even more important to their children. Unfortunately, many children do not have home situations that are conducive to education. Particularly in the upper grades, a safe, inviting library that stays open late can be a haven for

the student with a desire to learn, but has no quiet place of his or her own to study.

Not surprisingly, the idea of after-hours use is one many teachers and administrators are extremely uncomfortable with, for both cost and security reasons. The site committees can provide us with a forum where these concerns can be balanced with neighbors' and parents' aspirations for a school more open and integral to community life.

For example, at both Cragmont and Longfellow Schools in Berkeley, we have designed the library, theater and gym so each can be open after hours while the rest of the school remains secured. The new buildings we are working on for Berkeley High include a study/research center and a student union, both designed for a wide range of after-hours activities and events.

Fit the school into its community. A school, even an elementary school, is a big, noisy, busy place. Not surprisingly, neighbors tend to have very strong ideas about how it should look and operate. This is particularly so in the dense urban fabric of Berkeley, where sites are small, streets are congested, and forceful opinions are the norm. The site committee process, including neighbors as participants rather than adversaries, has led us to creative design solutions that enhance both school and community.

For example, the Cragmont site is located on a small, steep site in the Berkeley hills, in a picturesque residential area with spectacular bay views. With the site committee, we developed a solution in which the three-story structure is built into the slope, reducing its scale and preserving most of the 3.5-acre site for a variety of play spaces, gardens and nature walks. The walks and gardens functions as exten-

sions of the classrooms while the play spaces double as a park for a community with no other open space.

At Longfellow, the district had first explored razing the original 1930s-era school and replacing it with a new facility. But through our workshops with parents and neighbors, we learned how important the grand old school is to the identity and culture of its community. Again, with the site committee's involvement, we developed a new solution—one which restores the old building as classrooms, arts studios, and a multiuse theater, but adds a new building for the library, science labs and gym. An enclosed courtyard, which had become a serious security problem, is being replaced with an open, sunlit amphitheater.

Be resolutely honest about cost. If there is a downside to the open, inclusionary process described above, it is the pressure it places on the budget. Budgets for public schools are lean to begin with and, at least in our experience, the programs they are based on also tend to be lean. Art, science and sports programs in particular are often far more modest than parents would like.

Cost must be brought into the process as early as possible, and the committee must understand the implications of each program and design decision. In the early conceptual stages, when drawings are not yet detailed enough to support true cost estimates, unit cost factors from comparable projects can be used to provide a general indication of cost impacts. There is no point in developing a consensus solution that cannot be built.

Don't direct, empower and inspire.

There is nothing like an idealistic, enthusiastic group of citizens to get an architect fired up. Just remember, the role of the architect is not to direct the committee, but to empower and inspire

it. To the school board members, who have the real power over district resources, the architect is just another contractor, but parents and neighbors are constituents, and, hence, far more persuasive advocates for your vision. Moreover, the design of the physical plant is often only the first step in creating a great school. Your goal in working with the committee should be to develop collaborative relationships that endure beyond the ribbon-cutting.

At Cragmont school, we were fortunate to work with a visionary group of stakeholders who, long before the architect was selected, had already defined a vision for their school and determined what was required to realize it. Perhaps the single most important element of this vision was their insistence that, despite the hilly terrain and narrow roads, the school be located in their community rather than on some bigger, flatter site a bus ride away. The new Cragmont school is now under construction, but the nucleus of the site committee continues to collaborate on an ambitious educational program for the school.

Kerry O'Banion is vice president at ELS/Elbasani & Logan Architects in Berkeley. He has advised public and private clients on urban design and development strategy for over 25 years, with an emphasis on interactive, consensus-based decision-making on a wide variety of projects, ranging from schools and community centers to large corporate workplaces.

The School as a Place for Leadership

David Meckel, FAIA

For an educator who had committed her entire professional life to public education, what could be better than being made principal of an elementary school in the neighborhood where she grew up? This is exactly what Lynne Rodezno experienced when she was appointed principal of Oakland's Redwood Heights Elementary School in October of 1993.

The school sits on 39th Avenue, snuggled against Highway 13, and is surrounded by a residential neighborhood that is home to many adult alumni of the school—alumni whose children now attend the K-5 classes at Redwood. The student body of 350 boasts incredible racial and economic diversity, and the parents had demonstrated a 100 percent membership rate in the school's PTA for the prior three years. Even its Dads' Club is over 40 years old.

The school's future looked bright in all regards when Lynne arrived in the fall of 1993. The building itself, built in 1949, was scheduled for renovation on a fully funded basis under the state modernization program. When the school district hired a seismic consultant shortly after Lynne arrived, the school community took this as a sign of progress toward the realization of a successful renovation. Not surprisingly, the remainder of that school year passed without incident, and the students eagerly began their 1994 summer vacations in June.

With the children gone, Lynne and her staff worked to close out the school



Redwood Heights Elementary Portable

year and prepare for the next one. This annual routine received a devastating interruption on July 13th when Lynne was given the results of the seismic study. The report recommended closing the school immediately. Geological surveys confirmed that the southwest corner of the building was closer than the required 50-foot setback from a previously undiscovered fault. Lynne, optimistic and aware of the parents' devotion to the school, decided that acquiescence was not an option. PTA President Anita Sanchez and Lynne immediately set up a parent and staff phone tree to notify everyone about an emergency meeting the next night, July 14. Remarkably, given the short notice, over 100 parents and staff attended the impromptu meeting and reacted swiftly and en masse to the situation that was threatening their school. The school district wanted to set up portables at a community college a mile-and-a-half away. The parents, who knew the importance and history of the school's site, rejected this plan. They insisted on



Redwood Heights Renovation

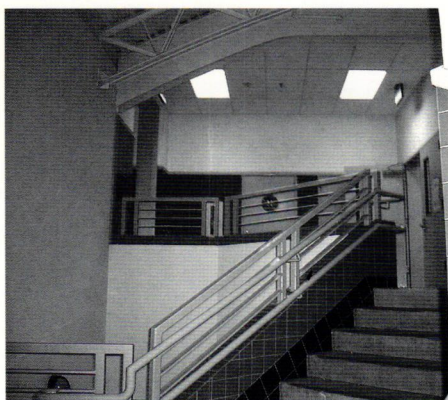
not leaving the site, and a compromise was struck: classes would be held in portables located on the existing playground area. While this would create a short-term hardship, students could still walk to school, and everyone would remain focused on solving the school's future on this site, not somewhere else. A seven-and-a-half week scramble resulted in 16 portables that were sited on the abandoned structure's asphalt play area and made ready for the start of Fall 1994 classes on September 7—only three days later than normal.

With the regular operation of the school underway, the staff and parents began the process of seeing if the existing building could be saved. Hurza Consulting Engineers were hired and the 1994-95 school year ended with the hiring of HTI Architects in May 1995. HTI began space planning based on a scheme that re-used the two-story classroom part of the building. The plan would replace the assembly hall at the opposite end of the layout, thereby, satisfying the 50-foot, fault-line setback.

While this plan was less expensive than building a new structure, its cost

was greater than the funds available for the scheduled renovation. Although Proposition 203 had passed, Governor Wilson decided to deal with class size reduction by using some of these funds for, of all things, more portables around the state. Once again, the school community took action, but it was the students rather than the parents who were working to save Redwood Heights Elementary. In November of 1996, two busloads and dozens of cars full of students, teachers and administrators traveled to Sacramento to convince state legislators to allocate additional Prop. 203 funds to complete the project. Six students "tag-teamed" the delivery of the plea, which went as follows:

Good afternoon, Director Parker, Director Olsen, Director Evans, Director Dutton, Senator Greene, Assemblywoman Mazzoni, and Assemblyman Olberg. My name is Kacy Nahl. My classmates, Dane Welsh, Bradford Simpson, Laura Sanchez, Ariel McPhail, and Lucas Brekke-Miesner, and I are here today on behalf of the Redwood Heights School student



Redwood Heights Interior

body to ask the State Allocation Board to fully fund the reconstruction of our school.

Three years ago, geotechnicians found traces of an active thrust fault within 50 feet of our school building. Since there is a law which says schools and hospitals cannot be occupied by children under these conditions, we all had to move out of our building into portables. The portables were placed on our kickball diamonds and basketball courts. We were told that we would be able to move back into the building in three years, which will be next September.

September 1997 is quickly approaching, and no one has started to tear down our old building to rebuild our school. It has been very hard to keep all of our programs going. We must use a church in the neighborhood for assemblies. The whole school has to walk across a freeway overpass to get to the church. We go to the recreation center for recess and walk to the cafeteria portable for art and science (rain or shine) because the portables do not have running water.

Since 1949, when our school was built, kids have enjoyed pro-

motion ceremonies in our spacious attractive auditorium. They have had the opportunity to move from the primary classrooms downstairs to the upper-grade classrooms on the second floor and from the little kids' yard to the upper grade yard with the basketball and volleyball courts. These and many other traditions at Redwood have not been the same since we were moved from the building.

Students, staff, and parents have worked very hard with the school district and the architects to get the building plans drawn and approved, but now money is a concern. We were very excited when Proposition 203 passed because our parents voted for it, like many other Californians, so we could fix our schools. Most school districts, especially in the big cities like Oakland, do not have enough money to do these things without help. Proposition 203 was our help.

It is very important to all of us to have our school back. We have done everything we were asked to do to rebuild Redwood Heights, but now the money we were promised may not be available to fix schools like ours. Everyone thought money from Proposition 203 would be used to repair our school and make it safe for us. We don't understand what happened! Thank you for taking your time to listen to us. Please fully fund our building project; we really had a very special school as you can see by all of us who came to Sacramento today.

After a lively discussion and a motion by Senator Leroy Greene, 4.8 million dollars was allocated to the project. Throughout this long process, the vacant, but elegant, structure of the original building stood as a constant backdrop, and a reminder

to the school community that the portables—or “trailers” as U.S. Secretary of Education Riley refers to them—are not and should not be the normative condition.

Construction finally began in late 1997, and as with all the other processes associated with saving this building, it was performed in full view of the constituency that fought to make it happen. The students especially noticed the arrival of big machinery, the demolition of parts of the old school and the creation of new elements as part of their daily routine. The noise, dust and inconvenience of being immediately adjacent to a construction site seemed minor next to the progress this work represented.

Since the children had been in portables from the fall of 1994, only the current fifth graders who had actually started their school years in the original building, and then, as kindergartners, remained. However, when the teachers, parents and students moved their classrooms back into the completed structure over a holiday weekend this past January, that didn't seem to matter. This was always a school that belonged to the whole community, and now it was returned to them. And the children learned that temporary classrooms can actually be temporary as long as leadership isn't.

David Meckel, FAIA, is the current vice president of Communications for the American Institute of Architecture California Council and dean of the School of Architectural Studies at the California College of Arts and Crafts in San Francisco.

The High School as Workplace

Janice Siegel

If you are at all familiar with the history of our educational system, then you are aware that our schools have been repeatedly subjected to periodic bouts of reform. Many of these episodes have been short lived, leaving few tell-tale signs in their wake—other than a growing reputation that reforms are a fad that surely will pass. Others, such as the Progressive Movement at the beginning of this century, created enduring images of schooling that continue to exist today. Some—most notably the open education schools of the early 1970s—are infamous.

Almost every modern attempt at changing the “grammar of schooling” borrows from the same repertoire of elements, and this current era of reform is no different. However, what is different is its resilience, comprehensiveness and pervasiveness. Fifteen years have passed since the publication of *A Nation at Risk* and more states, districts, and schools are experimenting with reforms than at any other time. Now is a key moment for architects and educators to seriously reconsider the role of the physical environment in these restructuring efforts and to design facilities that are supportive of the ways schools are currently being utilized rather than how they functioned in the past.

Many of you may be thinking, “Well, we have been designing with reform in mind.” But I challenge that few school architects have really looked at what is going on in schools, specifically how teachers’ and students’ use of space and place has changed since any of us were students in high school.



Teachers at Work

I also challenge that many assumptions made about teachers and the school as a workplace are false.

To cast some light on these issues, I recently conducted a pilot study of six Northern California high schools that are in the midst of various reforms. I spent one day in each high school interviewing students and teachers as well as observing teachers in their classrooms and the general environment of the school. In all, I interviewed 62 students, 104 teachers from different subject disciplines, and observed 36 different classrooms. All of the schools have adopted alternative organizational structures—career academies, houses, schools-within-schools, block scheduling, etc.—that are aimed at integrating curricula across several core subject areas and reducing the size of learning environments.

ENVIRONMENTAL CONSTRAINTS ON RESTRUCTURING

Of these six high schools, only Sierra Range High School has been successful at making its efforts a reality, while



The School Office

the programs of the other five schools continue to remain principally ideas on paper. The fundamental difference between Sierra Range High School and the others is its classroom organization. Although the school opened in 1964, it has a much more progressive plan than any of the other schools in the study, including a school that opened just three years ago. Four of the less successful schools are designed in traditional egg-crate, finger plan, campus styles with the subject departments all clearly defined and separated. Within these four traditional plan schools, teachers are assigned classrooms not as part of a house, academy or school-within-a-school, but according to the subject they teach. Alternatively, the newest school is designed around houses or clusters — except for the science classrooms which remain segregated in a separate building, but surrounded by the other buildings. This design has become very popular in recent years. At this school, all core subject teachers, except for science, are assigned to buildings as part of an interdisciplinary

team. Regardless of the school design, collaboration between English and social studies teachers in these five high schools has been mildly successful. Math and science teachers remain steadfast in their isolation.

Then we have Sierra Range which was designed such that each of the four high school grade levels would be located and fully supported in its own building. Each building, with its own central courtyard, contains two fully equipped science classrooms (yes, you read that right). In addition, in two buildings the permanent walls between the English and social science classrooms have been replaced with operable partitions, and there has been discussion of installing several more. While the school is no longer structured around grade levels, they have taken advantage of the existing organization. Teachers in this school are assigned classrooms based on the academy in which they teach and are surrounded by their team colleagues. Interdisciplinary communication and collaboration is significantly higher in this high school than at any

other school I have observed. One of the few complaints I heard in this school (other than the lack of conveniently located staff toilets) is that the teachers had to make an effort to hold departmental lunch meetings each week—whereas in the other schools few, if any, team meetings occur at all.

THE SCHOOL AS A WORKPLACE

Much of what I learned from these high schools is as attributable to overcrowding as to restructuring. Nevertheless, the issues raised by the teachers and students are critical to their experiences in their school and classrooms, and are universal among high schools—even new ones. Especially for teachers where the school is their workplace, the problems described below greatly affect their ability to teach, to remain motivated as a professional, and to derive satisfaction from their job. Indeed, the facilities provided the administrative staff (including secretaries and clerical workers) are generally superior to those of the teaching staff—and that is not saying much.

A fundamental problem in all of these high schools is the lack of teaching stations. Many teachers no longer have a classroom of their own. Depending on their seniority, teachers are expected to either share a classroom with other teachers or to move about from classroom to classroom much as the students do. It is a common sight to see these transient teachers carrying their books and materials with them in shopping carts and suitcases as they travel from place to place, teaching English in home economic classrooms that smell of burnt cookies and sauerkraut in one class (I'm not kidding) and in abandoned wood shops next.

Several additional problems have developed as a result of this poverty of space. First, teachers no longer have places to work when not teaching.

Although most new schools, and some older schools, do provide departmental offices, these spaces are frequently co-opted for other purposes (usually storage or as offices for speech teachers or grant/restructuring coordinators), and those offices that do remain are woefully inadequate, lacking sufficient space and privacy for the numbers of teachers expected to share the space. At Riverdale, the newest school I visited, the math office is truly a nightmare. Although the room is relatively neat, all available surfaces (including the floor) are covered with books and papers wedged between several computers, and every drawer and cabinet has been claimed as the territory of one teacher or another. During my visit to this place, there were no less than six teachers eating lunch and trying to get work done. To top it off, three small suitcases were parked in what available space remained. The total number of teachers that share this space? Sixteen. The number of teachers that can realistically use this space as an office? Three.

Not only are workspaces inadequate, but they also lack sufficient space for teachers to store the vast amounts of materials they require to do their job. I have repeatedly heard architects and district administrators that I worked with talk about the enormous amounts of “junk” that teachers collect and store (and when it comes to cutting things out, casework is typically the first to go). Well, from what I have learned from these so-called junk collectors is that what they keep are teaching materials that are used regularly, student work needed for the school's WASC accreditation review, teaching materials from that world history course they taught two years ago and will teach again next year, and so on. Always a nightmare in any school, this problem is greatly exacerbated when it comes to overcrowded

schools. For all of them, lack of storage space is paramount. Many teachers store materials at home in their garages, attics and spare rooms. Do you ask your employees to store work materials in their homes?

Another aspect of this problem is the teachers' inability to have continual access to their materials. If teachers are assigned to one classroom, they typically store their materials there. However, because they share the room with another teacher (typically a rover), the primary teacher has to find somewhere else to work during his or her "prep" period other than that classroom. This requires hauling a load of work around to wherever they manage to find a relatively quiet and unoccupied corner. And if they forget something, well... Similarly, for the transient teachers their primary storage space is either home or the department office, if there is one. If they forget to pack some vital piece, they are out of luck.

Finally, a problem was brought to my attention that I had never considered. Teachers who share classrooms, much less travel around, must be considerate of the other teachers in how they use the space. Typically all of the teachers feel that they cannot use the classroom walls, or even arrange the furniture, as they please. This issue is complicated by the fact that the classrooms are much too small for any amount of creative arrangement (that is why operable partitions are becoming so popular), and most of the teachers who share a classroom are neither from the same department much less the same academy or house (and as such are less likely to coordinate how they use wall space). The classroom space and walls are a teaching tool. When the space is insufficient, it is ineffective, essentially handicapping teachers in their capacity to do their job.

Granted some of these issues are

administrative problems, but clearly they are also attributable to inadequate facilities. I know many of you are mumbling about how the fault lies at the feet of the State and the manner in which square footage is allocated. And I agree that this is a problem, but I also think that as design professionals we have contributed to these problems, failing to fully consider how school environments are used—not just as learning places, but also as workplaces.

My challenge to each of you is to begin to think of schools in new ways. Many of these problems, particularly the balance between departmental and interdisciplinary ties, are not easily resolved. In a nutshell, new school designs and modernization of existing school facilities must incorporate two principal ideas that are at the foundation of current educational restructuring efforts:

- Because there are very few other supportive elements, the push should be toward an interdisciplinary structure. Teachers have many supportive affiliations within a subject, for example departmental and professional, that are much stronger than interdisciplinary ties. Frankly, this means integrating science classrooms throughout the school rather than isolating them in a separate building or wing. Although it may be less expensive to build a school with the science facilities clumped together, in the overall scheme of things, the educational cost will be enormous.
- Classroom spaces need to be flexible and varied. Either classrooms need to be much larger to allow for a wider range of activities, or else a variety of different spaces need to be provided (whole class, small groups, casual versus conference type spaces, places for individual students to work).

Part of the challenge we face is teachers' and architects' personal experiences of educational space have bounded how teachers perceive and use classroom space and what architects think are appropriate classroom sizes, shapes and arrangements. We need to think beyond our own experiences and create new educational environments that embrace the possibility of experiences teachers and students are shaping today. If we do not change the physical aspects of the "grammar of schooling" to fully support the new organizational structures, this era of reform will also eventually fade away.

NOTES

1) Tyack, David and Tobin, W. (1994). The "Grammar" of Schooling: Why has it been so hard to change? *American Educational Research Journal* 31 (3): 453-479. The "grammar of schooling" is a phrase used to describe those enduring characteristic elements of the educational system that have been particularly resistant to change: age grade levels, subject departments, 50-minute class periods, teacher centered practices, the egg-crate classroom structure, etc.

2) President's Commission on Excellence (1983).

3) All names of schools and individuals are fictitious.

4) There are several case studies of schools designed in this manner that have failed to fully adopt reforms and eventually returned to a departmental structure. The segregation of the science department was one of the key elements in the failure of these attempts at reform. See Siskin, L.S. (1994). "Is the School the Unit of Change: Internal and external contexts of restructuring." In P. Grimmet and J. Neufeld (eds.), *Teacher Development and the Struggle for Authenticity: Professional growth and restructuring in the context of change*. New York: Teachers College Press.

5) There are several sources for learning more about this aspect of teachers' work, however, Judith Warren Little and Leslie Siskin's book, *The Subjects in Question: Departmental organization and the high school* (1995) is the most comprehensive.

6) Following are four excellent books on high schools as they have become and what they can be:

Powell, A.B., et. al. (1985). *The Shopping Mall High School: Winners and losers in the*

educational marketplace. Boston: Houghton Mifflin.

Sizer, Theodore. (1984). *Horace's Compromise: The dilemma of the American high school*. Boston: Houghton Mifflin.

Sizer, Theodore. (1990). *Horace's Hope: Redesigning the American high school*. Boston: Houghton Mifflin.

Grubb, Norton W. (ed.). (1995). *Education Through Occupations in American High Schools, Volume I*. New York: Teachers College Press.

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News from Los Angeles: Billions for Schools and Who Is Watching?

PROPOSITION BB AND ARCHITECTS

Michael B. Lehrer

PICTURE THIS!

A 10-foot high, rust-painted, chain-link fence, lining a sidewalk on a public street. Beyond, five feet of cracked asphalt fronting a tan, textured, plywood end of a "portable" school room adorned with a side-mounted HVAC unit and a guardrail, about three-feet high.

WHAT IS IT?

Bingo! It's the ubiquitous recent addition to any/every Los Angeles Unified School District school. It is emblematic of the schools' attitude toward their communities, the (dis)honorific place that schools have come to occupy in the public mind, and most profoundly, the absence (as in black hole) of design from the culture of the Los Angeles Unified School District.

BACKGROUND

Since Proposition 13 passed in 1978, and after almost two generations of ill-fated attempts at social engineering, the Los Angeles Unified School District (LAUSD) has become an impoverished and besieged \$7 billion-a-year bureaucracy. Approaching the nadir of the abyss, the voters of Los Angeles almost passed a \$2.4 billion bond measure in November 1996. The voters understood that vast monies given to this district—where issues of quality and excellence had long ago been deemed unachievable, inappropriate, and politically incorrect—would be simply wasted.

In April of 1997, The Board of Education offered the bond measure anew, this time as Proposition BB, with citizen oversight mandated. It easily



A View from the Street



A Place to Learn and Play?

passed with the needed 2/3-majority vote. The Proposition BB Blue Ribbon Citizens' Oversight Committee was born.

The committee oversees \$2.4 billion, soon to be \$4 billion, worth of construction in the Los Angeles Unified School District. As the American Institute of Architects of Los Angeles (AIALA), we sit on an 11-member committee along with the AFL-CIO, the Chamber of Commerce, the city controller, The Association of General Contractors, and others, representing not only architecture, but all of the design disciplines. We have become the conscience of the committee, and we are responsible for bringing design—slowly but surely—to the forefront of this initiative. We are nurturing a coalescence of interest in excellent schools.

What has ensued is a model of what, if anything, can salvage this beleaguered district. Architects have emerged as the key players in transforming a bleak, defeated, and defeatist bureaucracy into one where vision, creativity, economy, and a soaring human spirit might be conceivable.

That's good news.

This ponderous, downtrodden \$7 billion district is virtually impossible to move in any direction. That's real bad news.

Any movement of this \$7 billion district, in the right direction can have massive and positive consequences to our children's education. The reestablishment of schools as centerpieces and places of honor in their communities can meaningfully bolster a pride of place, thus, nurturing good and caring citizens. That's real good news.

Need a change in culture. The biggest challenge and opportunity lies in changing a culture of crisis and poverty to one of research and development, of ongoing testing, refinement, innovation, and simple improvement. This notion has been antithetical to the district for a very long time. No good deed goes unpunished. In jumping from crisis, to emergency, to crisis, the district long ago lost the ability to distinguish what is urgent from what is important. Everything becomes urgent. Those who respond to urgent problems quickly learn that if their solutions are not per-

fect, they will be the fall guys. A “damned if you do and damned if you don’t” mentality pervades the district. There is no upside for innovation—“thinking outside the box.”

These are the fundamental questions we pose (and must answer):

- What is the role of DESIGN?
- What is its VALUE?
- How do we INSTITUTIONALIZE DESIGN into the culture of the LAUSD?
- Why is this ESSENTIAL and RUDIMENTARY?
- How can the best architects be HIRED?
- How can the architect hired be the BEST he/she could be?
- How do we PAY for it?

The BB Oversight Committee and the AIALA, in particular, has led the critical effort to “break out of the box.” Under the spirited and bold leadership of Steve Soboroff, the committee’s chairman and the senior advisor to Mayor Riordan, AIALA has challenged and cajoled the leadership of the school district, the BB Oversight Committee, and other public and private players.

While this is a work in progress, here is a current scorecard.

The language of the school district is changing. While language alone doesn’t mean real change, this is a powerful beginning. Design, planning, community building, value, quality, even beauty, enter the conversations and public pronouncements of the LAUSD leadership. At our BB Oversight Committee meetings, they, as well as other committee members, look to the AIALA as the conscience of the committee. They check for our approval, concern, or disgust at proposals and attitudes they present.

There are several extraordinary initiatives in place and emerging.

Fifty-one new schools are to be built in the next several years. This staggering endeavor was seen as business as usual until AIALA said, “The making and remaking of 51 schools in 51 communities throughout Los Angeles at the beginning of the 21st Century represents a once-in-a-lifetime opportunity to dramatically improve our schools, our neighborhoods, and our city. The order of magnitude is of two Alameda corridors, or of a big chunk of our transportation system.”

It’s big. For too long, we in Los Angeles have treated infrastructures—like streets, like the Los Angeles River, like our schools—as one-liners, things that have one thing to do and nothing else. In cities deemed to be successful, the making or fixing of infrastructures is the occasion for related improvements that make them better places in which to live. A truly complete master plan—from the choice of sites, to the type of campuses proposed, to new prototypes, to a clear mission for the school’s place in its community—must be done with vision, prudence, creativity, and joy.

Master plans should be in place for every existing school in the district. With the hundreds of millions of dollars being spent on the district’s 700+ schools, there are no master plans for the various schools. The redundancy, loss of opportunity, dearth of vision, adding portables by rote, etc., is the way it has been done for two generations. The district is now working with us to incorporate master planning into their *modus operandi*.

Our most romantic and compelling initiative is the Greening Project. We have shepherded this project into reality with the greening of 20 million square feet of asphalt, one third of the total hardscape of the district. About \$200 million was slated to be used to repave one-third of the hardscape of the district. When the idea was imagined by

Steve Soboroff and Andy Lipkis of Treepeople to use the funds to green that area, AIALA immediately supported it. When it was approved by the Board of Education, only AIALA understood the complexity of the project, and we knew it was doomed to fail without major bureaucratic reshuffling. LAUSD was going to add this “minor” project into some overworked bureaucrat's portfolio. Instead we created (and legislated) the position of a greening coordinator, “an entrepreneurial manager.” The BB program manager, 3DI/O'Brien Kreitzberg, then hired a distinguished architect/landscape architect, Guillermo Aguilar, AIA, to run the project. Aguilar's role—his vision and drive—became a model of how to make good things happen—shade, placemaking, watershed management, etc. The transformation of our schools is beginning to happen in powerful ways. This is really good news.

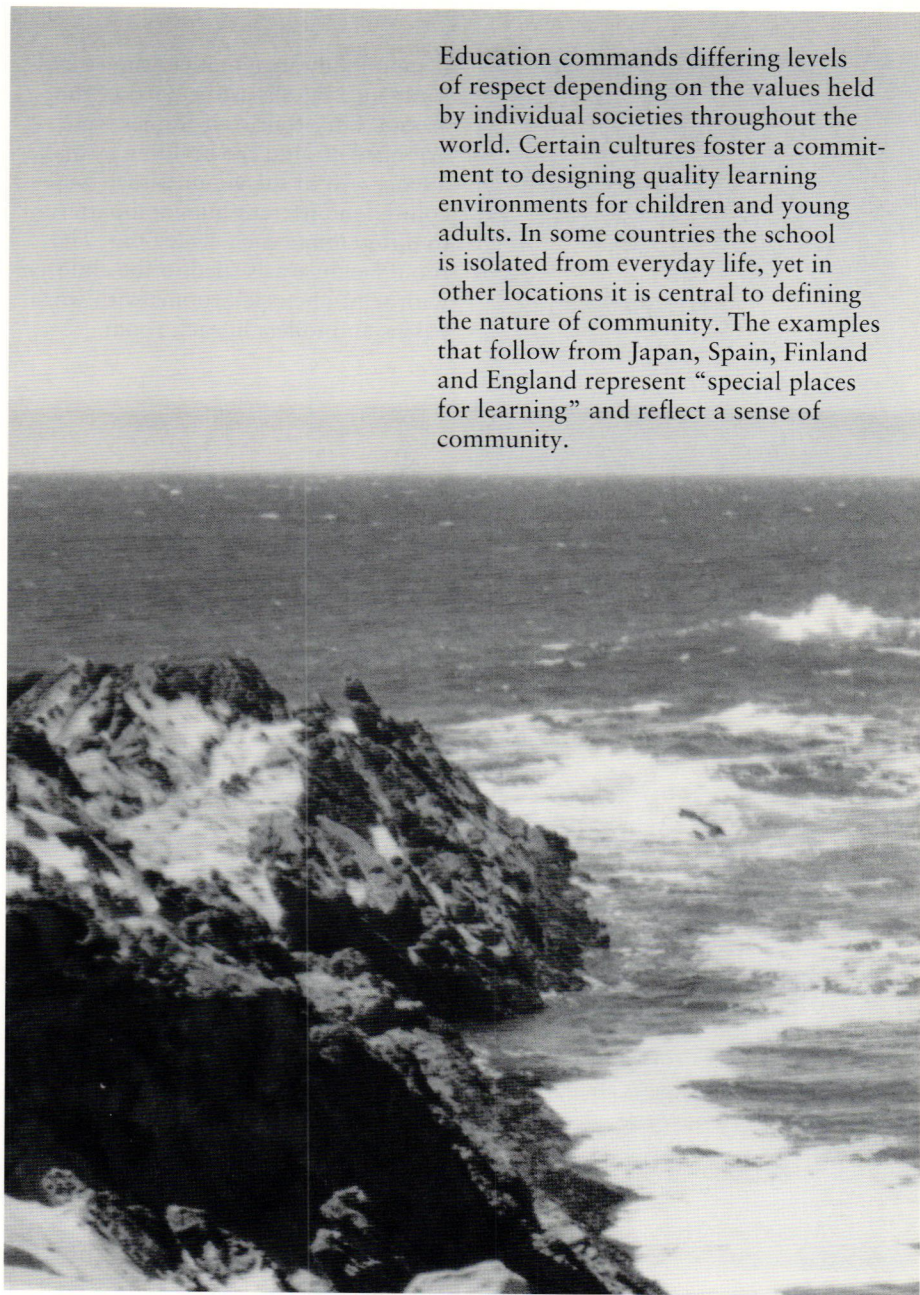
Other initiatives where design is insinuating itself are the repainting of all of the schools, new primary centers, and, hopefully, the core spirit of the district.

This powerful work is happening largely because of AIA's leadership and because the public is beginning to understand that they must turn to architects—not lawyers, politicians, or others—to represent their interest and their future in the built world. We are leading the public conversation away from cynicism to synthesis. That's very good news.

Michael B. Lehrer, AIA, is a principal of Lehrer Architects, current president of the American Institute of Architects Los Angeles Chapter, and vice chairman of the Proposition BB Blue Ribbon Citizens' Oversight Committee.

Abroad Perspective

Education commands differing levels of respect depending on the values held by individual societies throughout the world. Certain cultures foster a commitment to designing quality learning environments for children and young adults. In some countries the school is isolated from everyday life, yet in other locations it is central to defining the nature of community. The examples that follow from Japan, Spain, Finland and England represent “special places for learning” and reflect a sense of community.

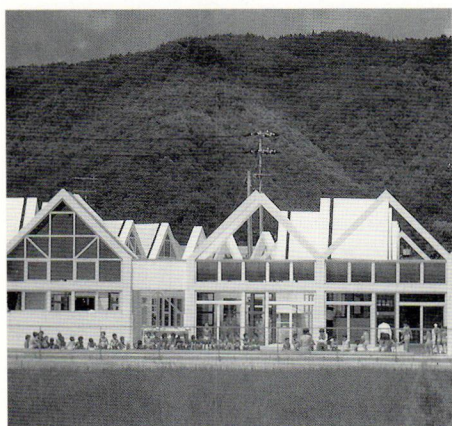


Takebe Kindergarten

Okayama Prefecture, Japan

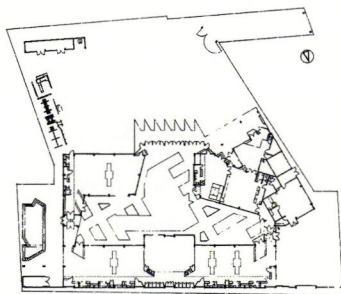
Kazuhiro Ishii Architect & Associates, 1979

(PHOTOS AND PLAN COURTESY OF KAJIMA INSTITUTE PUBLISHING CO., INC.)

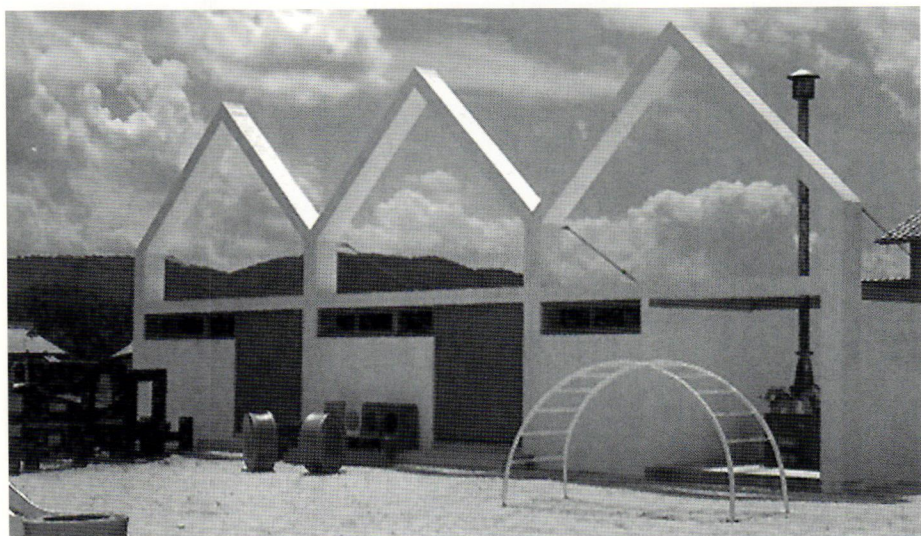


Frames from the Court

A mountain range that continues endlessly into the sky is the parti of the school. Fifty-four roof frames were arranged around the building to make a fence. All of the window sash were colored in different hues and patterns to differentiate each classroom. The room height was scaled to the children with semi-open classrooms with wash basins and toilets in each room.



Plan



From Outside In

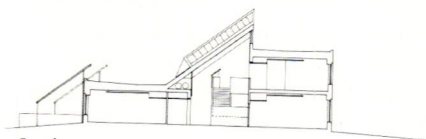
Suna School

Espoo, Finland

Järvinen and Airas, Architects, 1985

(PHOTOS AND DRAWINGS COURTESY OF KARI JÄRVINEN)

The school as street is illuminated by skylights and defined by shadows. The intent is grounded in the concept of the school as a house which encourages a sense of community. The red brick outside serves as a crust for the inside, texture is dissolved by white paint and light.



Section



Plan



Light on the Interior



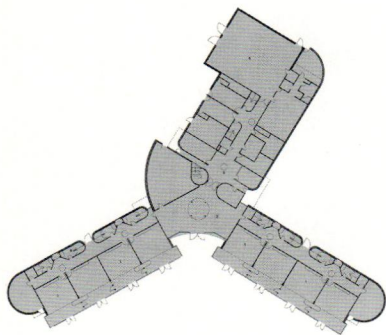
School Entrance

Farnborough Grange Junior School

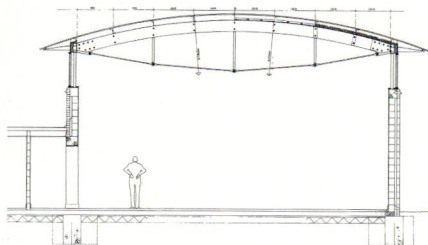
Hampshire County, England

Edward Cullinan Architects, 1991

(PHOTOS COURTESY OF MARTIN CHARLES)

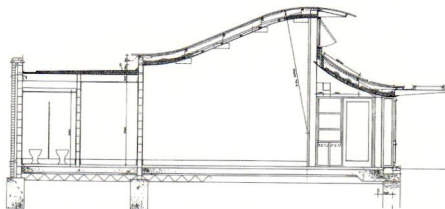


Plan



Cross section through hall

The Farnborough Grange Junior School uses all types of devices to bring light to the interior of the buildings—clerestories, skylights, monitors, and north light saw-tooth sections. Each classroom opens onto a hard surface area that leads to the grasslands surrounding the school, creating a perception of many layers. The collision of the curves and rectilinear components allow for places of celebration and identification. The thin roof edges and their supporting cantilevers make a delicate termination against the sky.



Typical section through classroom



Classroom Layers



Classroom Interior

Boarding School in Morella, Castellon

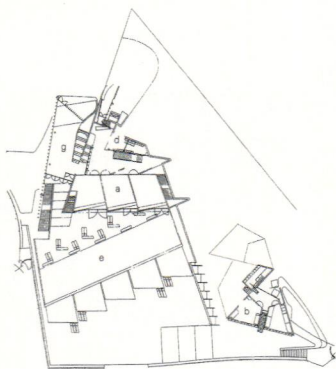
Morella, Spain

Carme Pinós, Architect, 1995

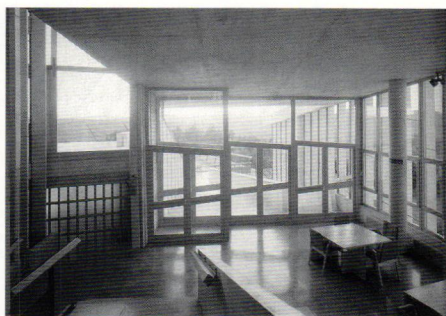
(PHOTOS COURTESY OF DUCCIO MALAGAMBA)

The small mountain town is a living monument within which Pinós' architecture is at ease. Her school maneuvers itself to connect to the chamfered mass of the town and the panoramic prospects of the countryside. The work at Morella is architecture of slopes and additive components. This is an elementary school for 2,500 students of which

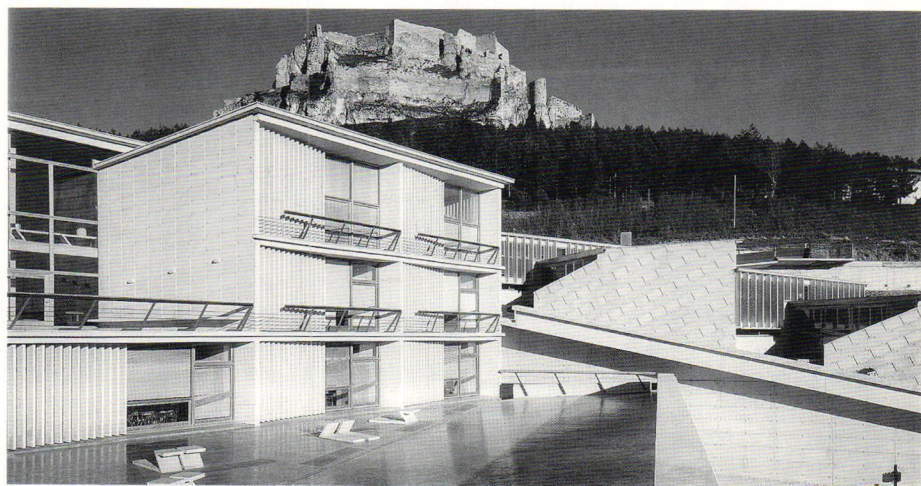
about 50 board at the school. The school is a public meeting place of poured concrete and steel washed with light, creating patterns of human use. The clever use of clerestories illuminating paths and soffits with polished floors allows light to bounce about the interior. The light allows all of its users to understand the nature of the place.



First Floor (main terrace) Plan

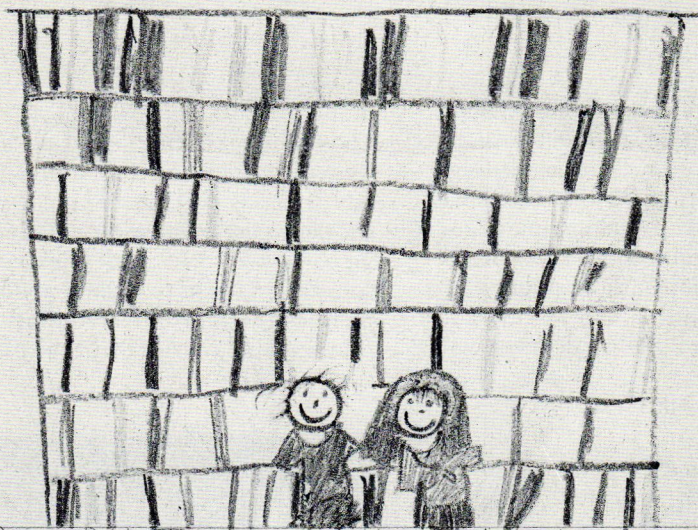


Intermediate Level Entrance



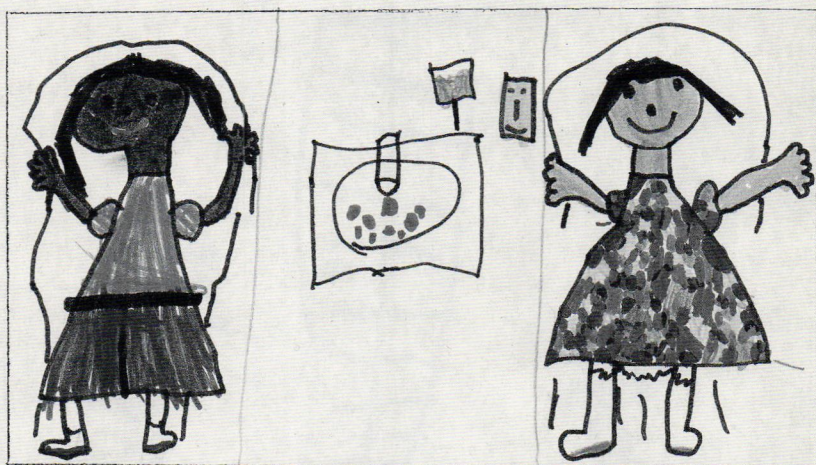
Playground Terrace with Classrooms above

etcetera



Dear Bob, I really like the kitchen because it
has more colors, and it's newer. I also really
like the library because it's quieter and
smaller. Sabrina

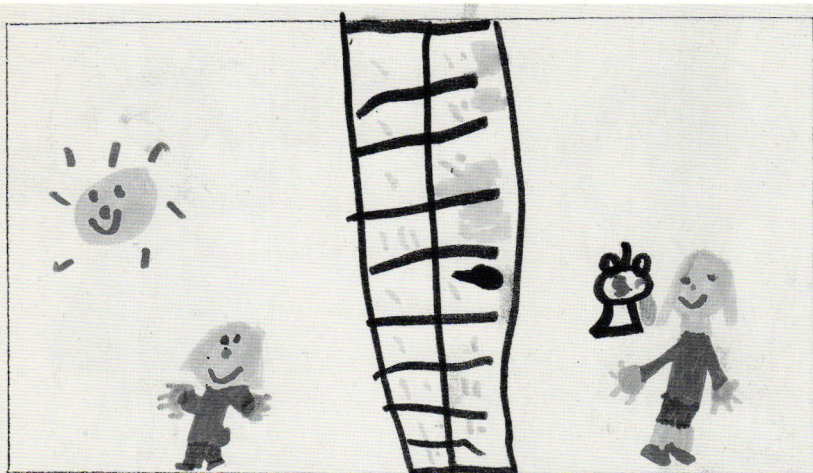
Drawing and commentary by Sabrina



I LIKE TAE NEELOW SIK

NAAMA

Drawing and commentary by Naama



I LIKE THE NOW

DORS - AND SEKS BKAS

WE DITII HNV THEM BFOR

MARTINE

Drawing and commentary by Martine

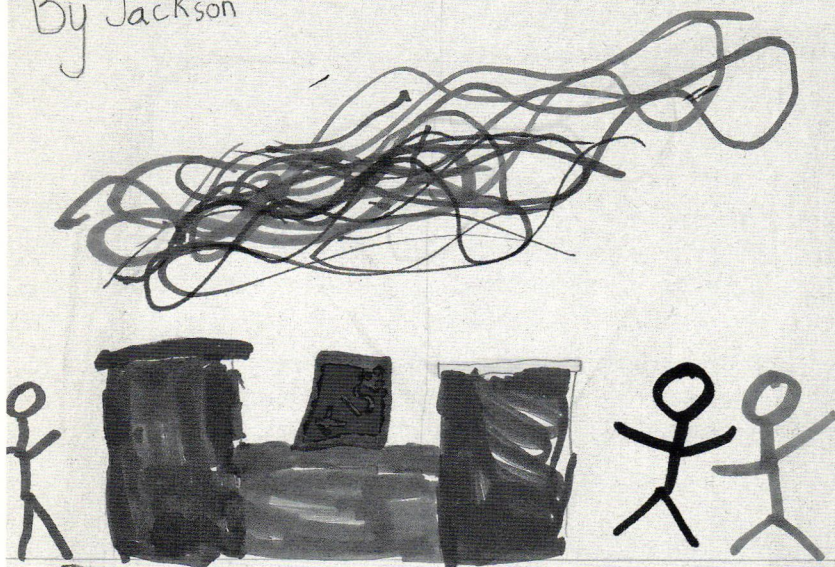
NICK HOMER
AGE 11

My 5th grade classroom was a trailer at the edge of the school yard. I don't really have much to say about it. To me it was just not anything without the teacher. It wasn't too cold and it wasn't too hot it was just right. It had some leaks in the windows but we enjoyed seeing the mold grow for science class. It was cozy!

I am now in the sixth grade. My classrooms are in a building and I like them and I don't sit in one room all day.

Commentary by Nick

By Jackson

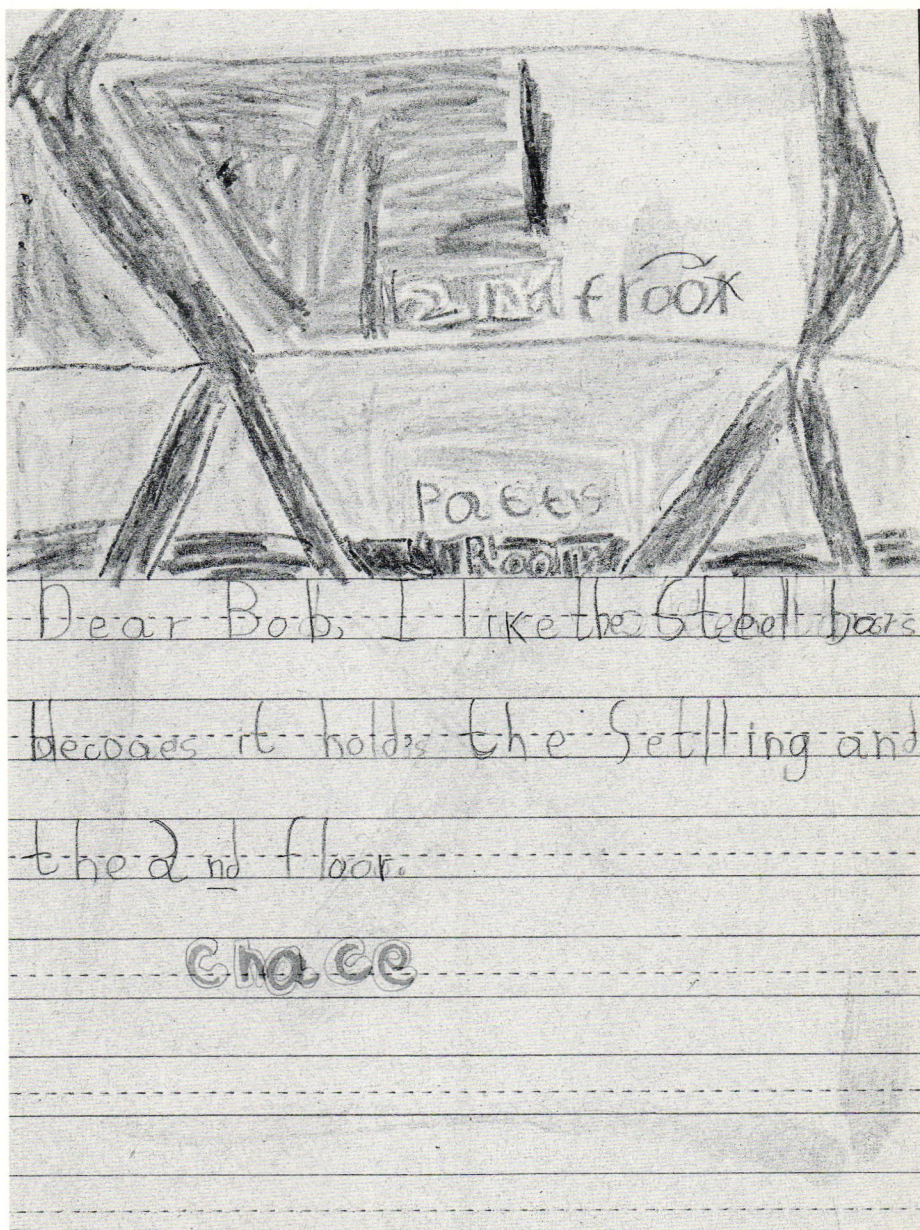


I Like Kitchen Because I makes a New Bathroom

in the Kitchen and I Love the Lift For

handicapped.

Drawing and commentary by Jackson



Drawing and commentary by Chace

un un nu

The good thing about the Bungalows is that there is ~~a~~ enough room for everything and every Body.

The bad thing about the Bungalows is that it is far from the building.

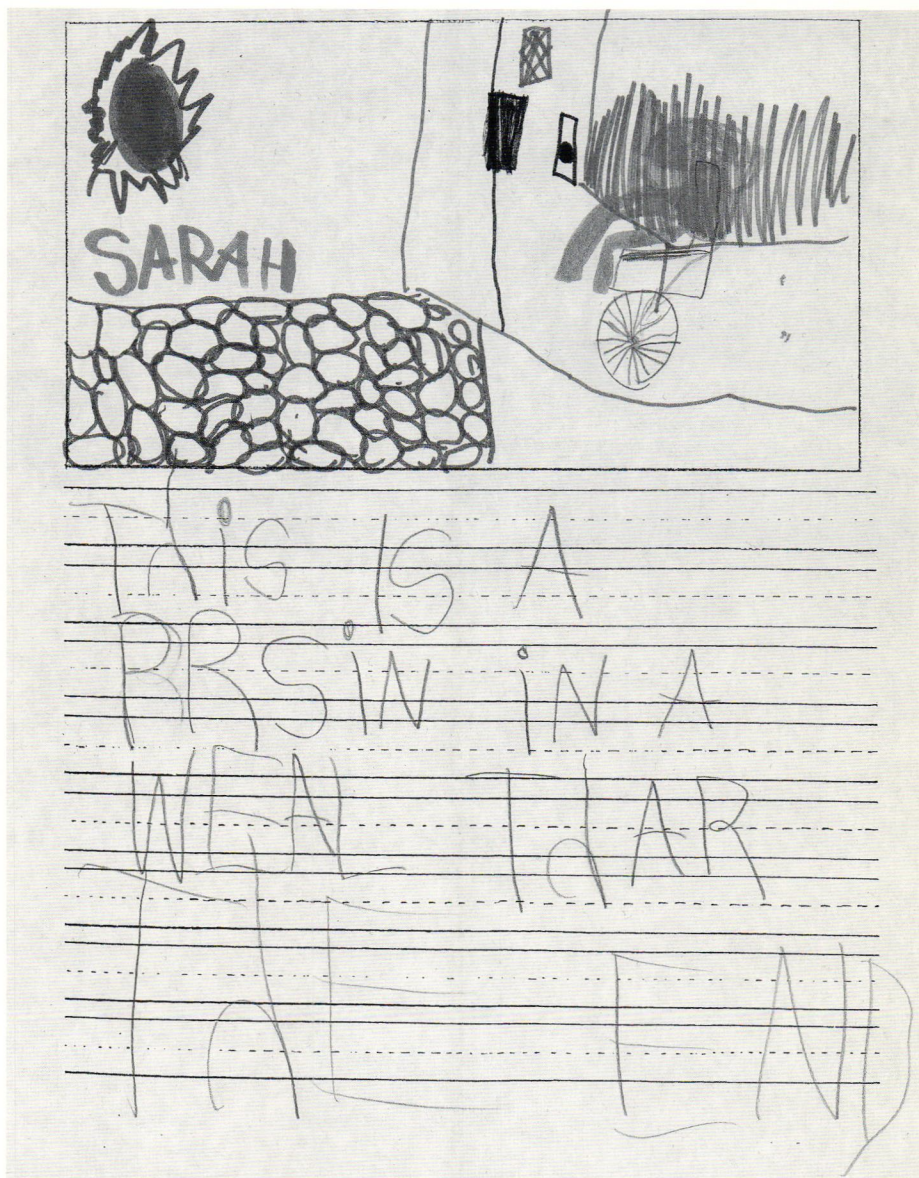
The good thing about the building is that you can easily go to a lot of places.

The bad thing about the building is that you might get lost!

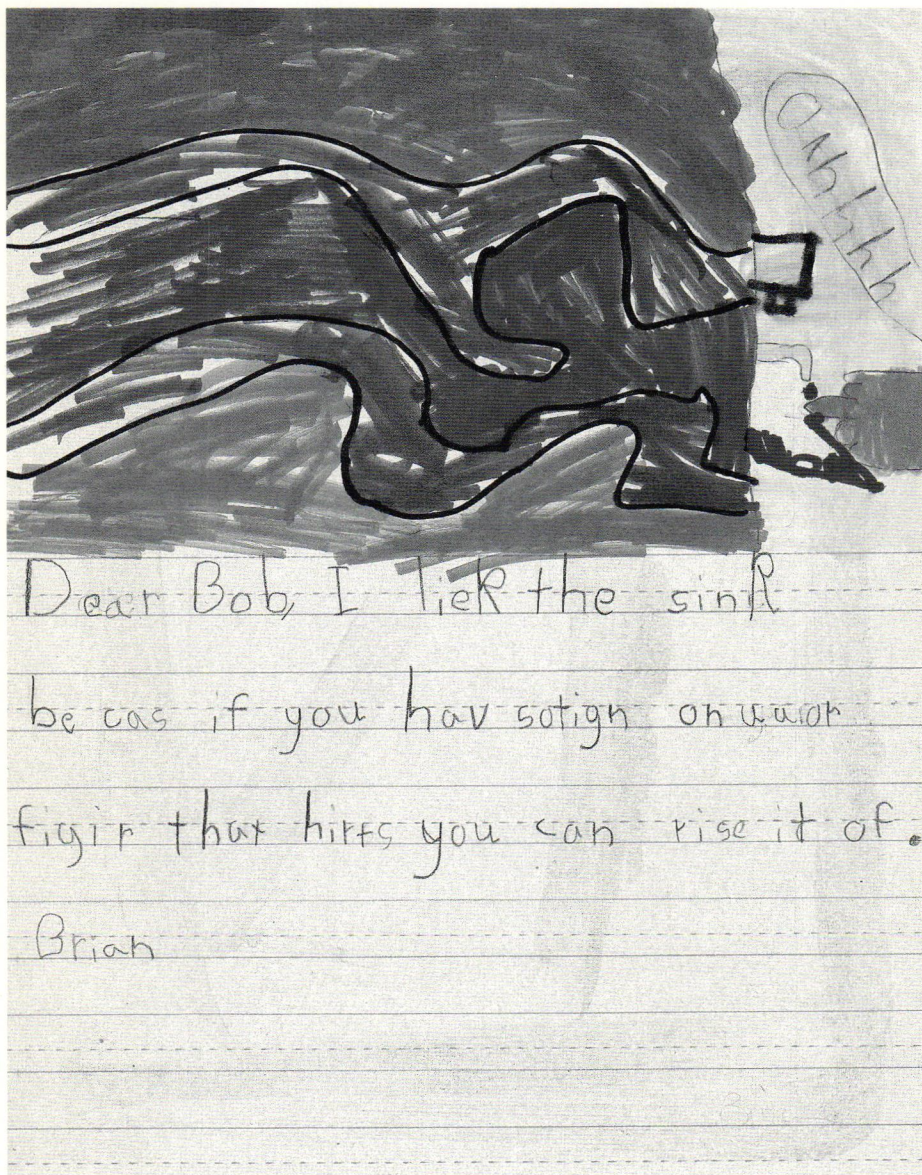
ERIKA BILDSTEN
WASHINGTON SCHOOL
BERKELEY

(20)

Commentary by Erika



Drawing and commentary by Sarah



Drawing and commentary by Brian

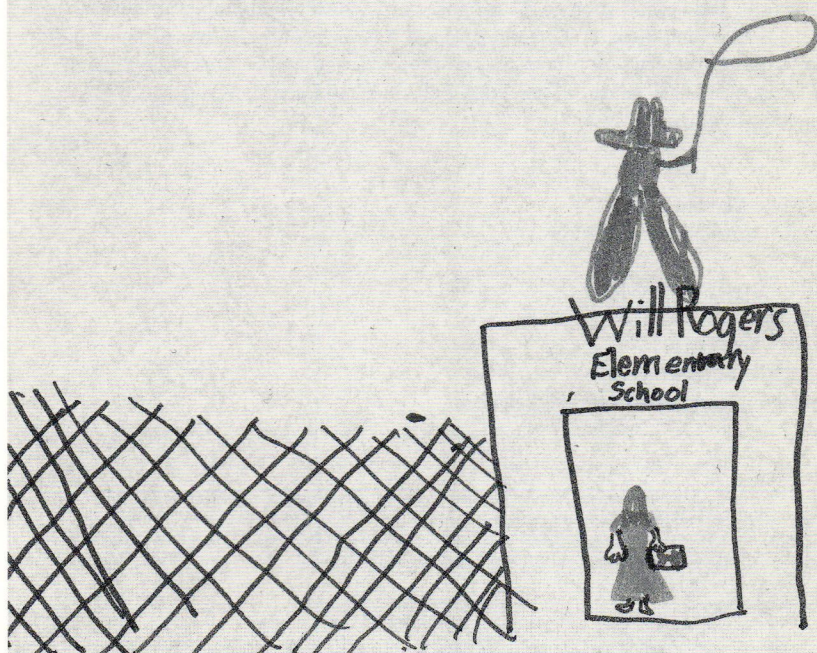
Dear Will Rogers

I like the yard because it is big and wide

I do not like the cafeteria because it is noisy.

I like my class room because it is big and has alot of books. I like the media center because it has alot of books and has alot of computers and because the computers are numbered. I feel safe at my school because all of the teachers are nice.

Claire age 7



Drawing and commentary by Claire

CALL FOR ABSTRACTS FOR VOLUME 20:2

The Editorial Board of *Architecture California* seeks abstracts for the next issue. The theme of the Fall 1999 issue (Volume 20-2) is "How Time has Changed the Profession." The issue will explore such topics as: 1) Time and money—with a commitment to quality. 2) Project delivery—its impact on project outcome and the work of the architect. 3) How work has changed in the architectural professions, i.e., the influence on the personal and professional lives of architects, clients, contractors, and other design and construction professionals. 4) How technology has changed the practice and profession of architecture. 5) What influences have the union/non-union trades and crafts had on the work of design and construction professionals? 6) What's between one-off and mass production in the design and construction industry? 7) How does the review and regulatory process benefit and/or constrain the design and construction process?

8) Examples and stories of projects where time constraints have impacted or improved the quality of the outcome of practicing professionals. 9) How has the importance of specific building types changed over time? 10) How do buildings become timeless or of the time? 11) What role does time have in determining style and fashion? This is not intended to be an all inclusive list. Other topics are encouraged.

Each of the issues includes an *etcetera* section which welcomes a variety of submissions beyond the scope of the focus theme. General submittals are welcome.

The abstract, of approximately 500 words, should clearly illustrate the primary topic, structure, and organization of the proposed article including samples of illustrations to be used in the article. A short biographical statement of the author is required. The Editorial Board reviews all proposals, and those selected will be further developed with the assistance of the editor. Please submit abstracts no later than August 1, 1999. Mail, e-mail or fax materials to:

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